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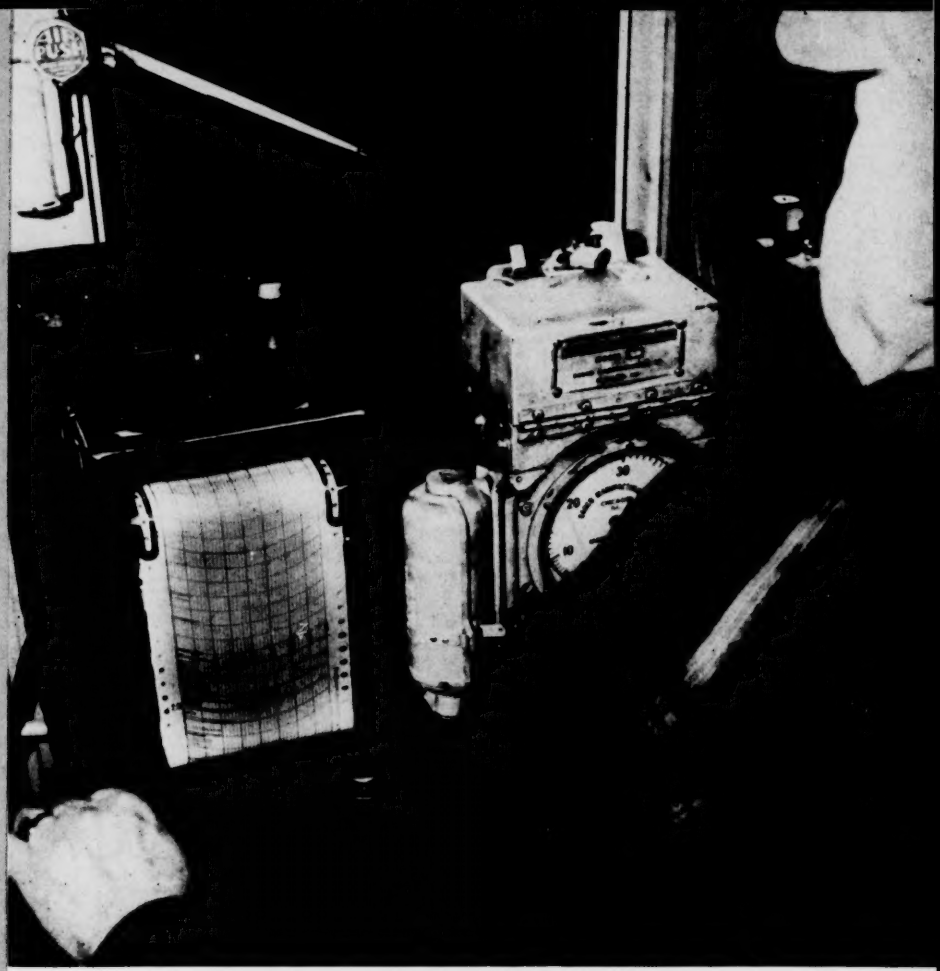

# A CHECK FOR RECORDING INSTRUMENTS

**Recorders Help Diesels Make Time** The graph on a recording ammeter mounted in a Diesel locomotive cab records the movements of the locomotive showing how the equipment functioned and how the engineer handled his train. Railroads also operate test and instruction cars which are equipped with both permanently mounted and portable instruments. The graphics are used for setting time tables, for testing brakes, and for instructing personnel.

PAGE 263

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## Marginal Notes

### Standardization Contributes to Human Welfare—

Most frequently the argument heard on behalf of standardization is that it improves the profit curve—it cuts costs and speeds production. Less frequently, standardization is credited with direct benefits to individuals. In this issue the more unusual argument has its innings.

One of the standards discussed was developed because of recurring accidents in hospitals. Despite every human precaution, accidental switching of anesthetic gas cylinders did happen under the great mental and emotional stress of hospital emergencies. Only the development of an entirely new system of attaching anesthetic gas cylinders to the apparatus (see page 261) could prevent these tragic mishaps. F. R. Fetherston, secretary-treasurer of the Compressed Gas Association, who described the new system for STANDARDIZATION, and his Association have given a high type of leadership to the new standard.

Not quite so obvious in its protective capacity, the second standard described in this issue is on electrical recording instruments. Ostensibly, this standard is a practical document for users and manufacturers of the direct-action type of instruments, outlining the performance requirements necessary for satisfactory service, with no safety or human element involved. The requirement that places it beyond the run-of-the-mill performance standard is its limitation on current leakage—a precaution to prevent electrical shock to instrument users and service men. These instruments are used in many different fields for recording the fluctuations of day-by-day or hour-by-hour operations. They are used by utility companies and in the major industries—chemical, oil, steel, atomic power, etc. Commercial laundries, radio broadcast stations, medical laboratories, and canning and bottling plants use them. Railroads use them to record passage of railroad

trains through automatic interlockers, and the Weather Bureau uses them to record wind directions and velocity. As many as 7500 direct-action recording instruments are in use by the Consolidated Edison Company in New York, alone.

**Standards in Purchasing—and Sales—**

More in the tradition in that it tells how standards help improve the profit margin is Sam Watson's article (page 266). Mr Watson's speech was called to our attention as one of the most interesting discussions of standardization presented in a long time. We believe you, too, will be interested in the rather unusual discussion that combines the purchasing agent's possible contribution to the engineering field, through standards, and his problems from nonstandard and hard-to-use vendors' catalogs.

**The National Bureau of Standards—**

We are frequently asked "What is the relationship between the National Bureau of Standards and the ASA?". Our answer is, there is no relationship except that of cordial cooperation. NBS is sponsoring a number of projects under ASA procedure. Its research laboratories have contributed data used by sectional committees, notably in the building field. As everyone knows, NBS is the repository of one of the nation's fundamental standards of weights and measures. As we go to press, word is received that Dr Astin is continuing as Director of the Bureau. We are pleased to give you Dr Astin's analysis of the Bureau's purpose and functions as seen by its staff (page 271).

**Government Standards—**

As promised last month, this issue sees the beginning of a series of articles by S. P. Kaidanovsky on Government Standards (page 269).

**Plan to be in New York**
**October 19, 20, 21**
**at the Waldorf-Astoria**

●

Our Cover Photo Courtesy of Esterline-Angus Company, Inc

*Opinions expressed by authors in* STANDARDIZATION *are not necessarily those of the American Standards Association.*


# Standardization

*Formerly Industrial Standardization*

ASA

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**Featured**

Not Even One Unnecessary Death. *By F. R. Fetherston* 261
A Check for Recording Instruments. *By H. C. Koenig* 263
Goubeau Urges Purchasing, Engineering Cooperation 265
Standards in Industrial Purchasing. *By S. H. Watson* 266
Government Standards. No. 1 in the Series—Federal Standardization. *By Samuel Kaidanovsky* 269
The National Bureau of Standards—Its Staff's Credo 271
ISO/TC 11-Boilers Meets in Paris. ASME Boiler Code Committee Sends Delegation 274
Gaillard to Become Consultant on Standardization 275
Special Rules for Residence Elevators. *By G. H. Reppert* 276
What Is Your Question? 278
Announcing New Books 281
This Month's Standards Personality 283

**News**

Bryan, Moreland on Standards Council for ASTE 273
ISO Action on Abbreviations, New Committees 273
How Detroit Edison Handles Its Spare Parts Problem 277
Joint Building Code Committee Reports 277
Drycleaners Unduly Blamed for Fabric Failures 278
Standards from Other Countries 279
Gaillard Seminar 287

**American Standards Activities**

American Standards (Status as of August 13, 1953) 282
What's New on American Standards Projects 284


Standardization is dynamic, not static. It means not to stand still, but to move forward together.


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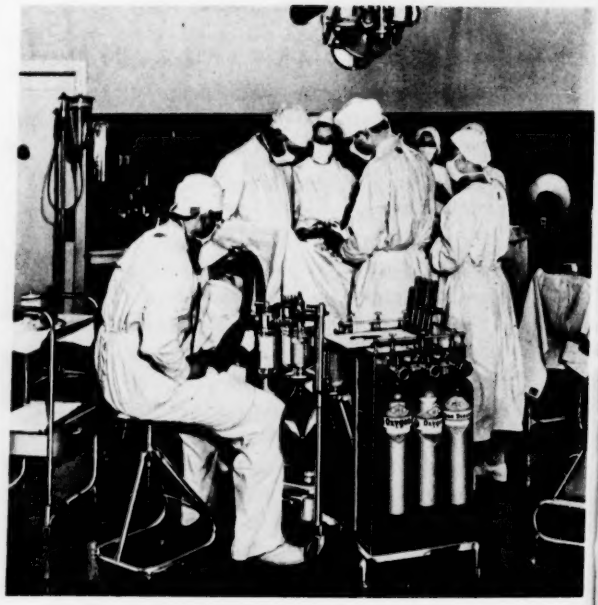
## TWO PINS MAY MEAN THE DIFFERENCE BETWEEN LIFE AND DEATH

*The Pin-Index Safety System,* built around the matching of pins in the yoke assembly of the gas apparatus to holes in the body of the cylinder valve, eliminates the hazard of erroneous interchange of medical gas cylinders with flush type valves.

Photos Courtesy Ohio Chemical & Surgical Equipment Co



# NOT EVEN ONE UNNECESSARY DEATH

**by F. R. Fetherston**

EVEN one unnecessary death is one too many. Acting on this principle, the Compressed Gas Association, with the cooperation of the American Society of Anesthesiologists and the American Hospital Association, has eliminated one unpredictable hazard of hospital operation. This is the accidental switching of gas containers on anesthetic machines. Despite every precaution, hospitals, dentists' and doctors' offices, and medical centers have found it impossible to prevent human errors that have at times caused carbon dioxide to be administered instead of oxygen, or helium instead of cyclopropane, for example, with fatal results.

Such errors have occurred when an attendant, through preoccupation, mental lapse, or pure carelessness, has fitted a carbon dioxide cylinder, or some other gas, into an anesthetic machine where an oxygen cylinder should have gone.

Machines for administering medical gases are equipped with yoke connections. The cylinders containing the gases to be used are attached on these connections, sometimes as many as eight different cylinders containing different gases on one machine at the same time.

Now, two pins are being placed on the yoke connections in certain designated positions — a different position for each type of gas. Two holes are placed in a corresponding position in the valve connection of the gas cylinder. For any one gas there is only one combination of pins and holes.

This ingenious device makes it impossible for an operator to attach the wrong cylinder to the apparatus. Unless the right cylinder valve is connected, the holes and pins will not match and the two parts will not fit together. A carbon dioxide cylinder cannot be connected where a cylinder containing oxygen should have been.

Another factor of safety is provided by use of the system at the gas manufacturer's filling plant. There, similar connections are used to assure that the cylinder corresponds with the types of gas with which it is being filled.

The entire system of pins and holes has been approved as American Standard and is one of the most important new provisions in the revised edition of the American Standard Compressed Gas Cylinder Valve Inlet and Outlet Connections, B57.1-1953.

The system provides for 10 combinations of pins and holes. At present, it applies to eight medical gases or gas mixtures — oxygen; carbon dioxide-oxygen mixtures ($CO_2$ not over 7 percent); helium-oxygen mixtures (He not over 80 percent); ethylene; nitrous oxide; cyclopropane; helium and helium-oxygen mixtures ($O_2$ less than 20 percent); carbon dioxide and carbon dioxide-oxygen mixtures ($CO_2$ over 7 percent). This leaves two combinations available for future assignment. It should be pointed out that the new system does not replace any of the means of identification now in use, such as labels and markings. It does, however, provide an additional and positive safeguard.

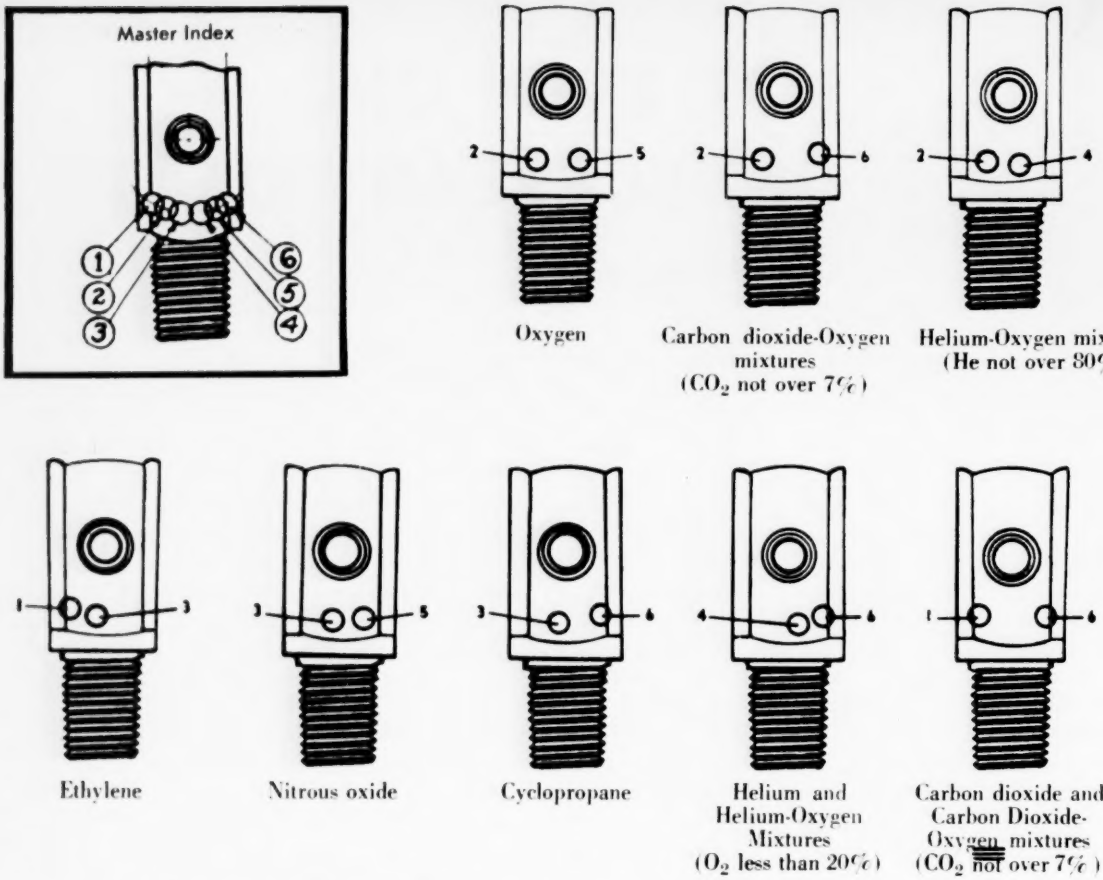
The new Pin-Index Safety System is now in use. Since January 1, 1953, only cylinders with appropriate holes drilled in the valves have been shipped by the manufacturers. Conversion of the apparatus itself was scheduled to start May 1. This timing made it possible for all hospitals to provide themselves with cylinders with drilled valves before any of the new apparatus with pins was placed in operation. Although cylinders with holes drilled in the valves can be used with the old-type apparatus, it is impossible for cylinders with undrilled valves to fit on apparatus after it has been converted.

The new system is actively being adopted because it is easy to convert existing anesthetic equipment without waiting for replacement with new, up-to-date equipment. A yoke adapter outfitted with the appropriate pins slips onto the yoke of the gas machine. This adapter provides the pins that put the system into operation and that fit into the holes in the cylinder valves.

The Compressed Gas Association is urging hospitals to search out all empty and out-of-date cylinders and return them for refilling so they can be drilled for the pin-index system. Imagine the upset and hazard if an anesthesiologist, faced with an emergency, attempts to fit a cylinder on an adapted machine — only to

---

*Mr Fetherston is secretary-treasurer of the Compressed Gas Association, Incorporated, and secretary of the CGA's Valve and Thread Standards Committee. This committee developed the standard approved by ASA as American Standard B57.1-1953, Compressed Gas Cylinder Valve Outlet and Inlet Connections. Besides his work with CGA, a technical organization representing gas and equipment manufacturers throughout the nation, Mr. Fetherston has been a member of the Chemical Industry Advisory Board of ASA since 1950. He is chairman of Sectional Committee K61 on Storage and Handling of Anhydrous Ammonia and Ammonia Solutions and is active on several other sectional committees.*




A combination of two pins projecting from the yoke assembly of medical gas apparatus and so positioned to fit matching holes in the body of the cylinder valve is the basis for *The Pin-Index Safety System*. For any one gas there is only one combination of pins and holes. Unless the right cylinder valve is connected, the holes and pins will not match and the two parts will not fit together. Above, reproduced from the Standard, are shown the eight assigned combinations of holes in cylinder valve bodies and the master index. Numbers indicate the standard designation for each hole.

find the valve *undrilled* and the cylinder useless.

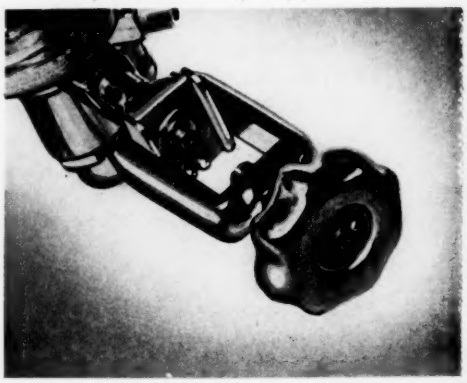
Before the Pin-Index Safety System was accepted as standard, it was tried out in a number of the large hospitals. Those concerned with its development wanted to proof-test the system to be sure it would offer no interference to efficient handling of the equipment in hospital rooms or medical offices. It was found to be thoroughly satisfactory. Not only are civilian hospitals interested in the new system; the military services have indicated their interest as well. The Surgeon General's office has furnished complete information about it to all medical depots.

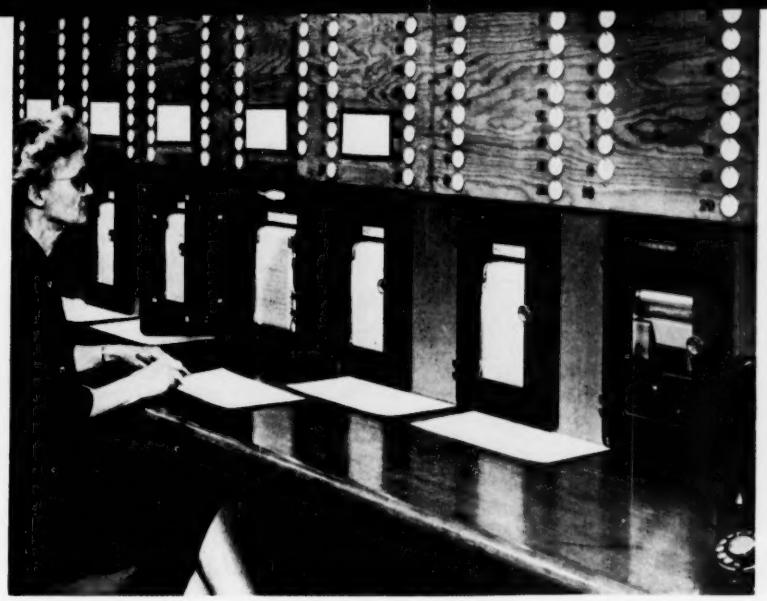
The new system is also being used internationally. This edition of American Standard B57.1-1953 has been approved by the Canadian Standards Association as well as by ASA, making the pin-index system a continent-wide standard. It has also been accepted by British industry, both medical and commercial, and has been recommended to the International Organization for Standardization for approval as an ISO Recommendation.

The Pin-Index Safety System for Flush-Type Cylinder Valves has been published as part of American Standard Compressed Gas Cylinder Valve Outlet and Inlet Connections, B57.1-1953. Copies are available from the American Standards Association, 70 East 45th Street, New York 17, N. Y., at $1.50 each.

The illustration below shows gas machine yoke with adapter installed. This example uses nitrous oxide pin positioning. Observe identifying gas symbol in adapter.

Courtesy Ohio Chemical & Surgical Equipment Co





Goodyear Tire & Rubber Co, Courtesy The Esterline-Angus Co, Inc

**Partial view of eleven records which tally production of 18,000 automobile inner tubes per day, recording mold defects as well as tubes produced.**

# A Check for Recording Instruments

**by H. C. Koenig**

ANOTHER advance has been made in providing users with workable standards for determining accuracy and performance of instruments. This is a new American Standard on direct-acting recording instruments. As defined in the standard itself, a "recording" instrument makes a graphic record of the value of one or more quantities as a function of another variable. This other variable is usually "time." In a "direct-acting" instrument the marking or recording device is either mechanically connected to the mechanism or is directly operated by it. The chart on which the record is marked may be either a round dial or may be in the form of a long strip. The new standard includes direct-current milliammeters, ammeters, millivoltmeters, alternating-current ammeters, voltmeters, wattmeters, power-factor meters, and frequency meters.

First in the series of American Standards on instruments was a standard covering panel and switchboard types of indicating instruments; this was followed by a standard for the laboratory type of instruments. Latest in the series is the new standard on recording instruments.

Although in general the requirements for recording instruments cover the same details as the other instrument standards, there is one important difference. For the first time in any standard on instruments, consideration is given to the personal hazard involved in their use and maintenance. For protection of the user, a leakage current test is included.

For many years specifications have defined the amount of leakage current permitted in electrical equipment used by the public, particularly for household appliances. Up to the present time, however, no restriction on leakage current has been included in standards for instruments. In preparing the new standard, the committee concluded that recording instruments should be constructed so as to eliminate the possibility of hazards under conditions of normal operation and for a reasonable period of service. Hence, the insulation test.

This test stipulates that the insulation (impedance) of the instrument shall be measured in terms of the leakage current at a specified voltage "between all the electrical circuits connected together and the case, and between each circuit and the remaining circuit or circuits (where more than one exists). It shall also be measured between all of the electrical circuits and all parts such as the chart mechanism which are encountered in the normal use of the instrument. This test shall be made after the recorder shall have been held for 16 to 24 hours in an atmosphere having a temperature of + 29.4 C (+ 85 F) and a relative humidity of 85 percent, and after the dielectric test." It further specifies that when measured at 300 volts, 60 cycles per second, this leakage current shall not exceed one milliampere. This is a new philosophy in connection with instrument specifications and standards. Such a requirement should be welcomed by all users of electrical instruments, particularly those who have to maintain and repair them while in service.

It is hoped and suggested that other committees will give consideration to this question of leakage current when preparing specifications on equipment or devices with which the user has to come in contact.

As indicated above, the detailed performance specifications contained in the new American Standard for Recording Instruments include in general the same characteristics as were covered in the standard for indicating instruments. (A specimen page showing one of the detailed requirements sheets is shown on page

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*Mr Koenig, Electrical Testing Laboratories, Inc, New York, is chairman of Subcommittee 2 on Recording Instruments, which was directly responsible for development of this standard. This is a subcommittee of Sectional Committee C39 on Electrical Measuring Instruments. In commenting on the work of his committee, Mr Koenig expressed his appreciation "to all the members of the committee who helped bring the preparation of this standard to a successful conclusion." Particularly, he thanked D. A. Young, Manager, Instruments Section, Westinghouse Electric Corporation, and E. E. Scott, Armed Services Electro Standards Agency, for heading up the two working groups.*

PLATE 3

## Tabulated Detailed Requirements
## for Switchboard and Portable Strip-Chart
## Alternating-Current Direct-Acting Electrical Recording Instruments
## 2-Element Wattmeters

***Includes Kilowattmeters and Megawattmeters***

| ITEM | UNITS | REQUIREMENTS | REFERENCE |
|---|---|---|---|
| 1. Rated accuracy | percent of full scale | 1 | 3.6.5 |
| 2. Chart scale length, min | inches | 3.75 | 3.4.3 |
| 3. Overshoot, max | percent | 2 | 3.6.4 |
| 4. Response time, max | seconds | 1.5 | 3.6.1 |
| 5. Loss, max | | | |
| Potential system, per element | va | 15.0 (Note 1) | 3.6.7 |
| Current system, per element | va | 12.0 (Note 2) | 3.6.8 |
| 6. Position influence (½ rated accuracy, max, for position deviation indicated, except in direction causing marking device to leave chart) | degrees from normal | 3 | 3.5.8 |
| 7. External-temperature influence (with ± 10C variation from + 25C), max | percent | 1.5 | 3.5.2, 6.1 |
| 8. Sustained-operation influence, max (Note 3) | percent | 1.5 | 3.5.10 |
| 9. External-field influence (magnetically shielded instruments in 5-oersted field), max | percent | 3 | 3.5.5 |
| 10. Frequency influence (± 10 percent cps inclusive, for 60-cps instruments), max | percent | 0.5 (Note 4) | 3.5.3 |
| 11. Voltage influence for ± 10 percent from nominal rated voltage, max | percent | 0.5 | 3.5.4 |
| 12. Power-factor influence from 1.0 to 0.5 leading or lagging, inclusive, at 60 cycles, max | percent | 1.0 | 3.5.6 |
| 13. Interelement influence, max | percent | 0.5 | 3.5.7 |
| 14. Inkwell influence | percent | 0.25 | 3.5.9 |
| 15. Safe working voltage to ground | volts max, peak value | 1100 | 3.6.6 |
| 16. Dielectric test (Note 5) | volts, a-c | 2600 | 6.5 |
| 17. Insulation test at 800 volts, 60 cps | ma | 1 | 6.6 |
| 18. Self-contained ratings, max | amperes | 20 | none |
| | volts | Note 6 | none |
| 19. Max voltage | percent greater than rated value | 20 | 3.6.12 |
| 20. Max current | percent greater than rated value | 20 | 3.6.14 |
| 21. Chart speeds (Note 7) | inches per hr | 3 (Note 8) | none |
| 22. Chart length, min | feet | 45 | none |
| 23. Chart-speed accuracy (for spring-driven timing mechanisms at speeds up to 3 inches per hour) | percent | 0.3 | 4.13 |
| 24. Voltage for chart drive, when applicable | volts, a-c | 120 | none |

NOTES

1. At 120 volts for nominal 120-volt rating. For higher nominal voltage ratings, the maximum volt-amperes shall be increased proportionately.

2. With current applied in phase with the potential to produce end-scale deflection while the potential system is energized at rated voltage, 60 cycles. In a two-element system this is determined with all current coils similarly energized.

3. (*A*) This maximum value shall not be exceeded at any time within 6 hours, during which time the instrument shall be energized at rated voltage and with in-phase current to produce end-scale deflection.

(*B*) In the case of instruments having nonlinear scales, these values shall apply only in those portions of the scale where the divisions are equal to or greater than two-thirds the width they would be if the scale were evenly divided.

4. The value stated is for any power factor from 0.5 to 10, inclusive, for 60-cps instruments.

5. When an electrically driven timing mechanism is used, the voltage for this device is 1500 volts.

6. External accessories may be used for all potential ranges.

7. In portable instruments, a means shall be provided for shifting the chart speed from inches per hour to inches per minute.

8. Other speeds, which include ¾-inch and 1 inch per hour, are available, although not necessarily from a single manufacturer.

**Reproduction of Plate 3 from American Standard for Direct-Acting Electrical Recording Instruments, Switchboard and Portable Types, C39.2-1953.**

264.) As in the earlier standard, these detailed sheets make it possible for users of instruments to check off quickly and easily all the performance requirements for the particular type of instrument they are using and to determine, from the characteristics listed and the limits specified, the accuracy class for any particular use. This is important if the user is to get the greatest efficiency from his instrument. Without such a listing of performance characteristics, instruments are sometimes used in positions or locations where it is impossible to operate them at their prime accuracy.[1]

The Special Instrument Issue of STANDARDIZATION, dated February, 1951, carried a progress report, prepared by the writer of this article, on the status of the then proposed standard for recording instruments. At that time it was hoped that the new standard would be available by the end of 1951. This prediction was a trifle optimistic. Shortly after the report was written additional problems arose, questions had to be answered, and difficulties had to be resolved, all of which necessitated additional meetings of the committee. The result was to postpone publication for nearly two years. This was a disappointing delay, but at long last the standard was approved as American Standard on April 27, 1953.

The committee is now continuing work on other types of recording instruments. At this time work is well under way on the automatic null-balancing type. In order to help the committee on this new phase of its work, comments from users of the present standard will be most welcome.

[1] For a discussion of the detailed performance requirements as defined in the American Standard for Electrical Indicating Instruments, C39.1-1951, see STANDARDIZATION, February, 1951, page 39.

The new American Standard for Direct-Acting Electrical Recording Instruments, Switchboard and Portable Types, C39.2-1953, is now available from the American Standards Association at 75 cents.

# GOUBEAU URGES PURCHASING, ENGINEERING COOPERATION

NOW, as never before, purchasing and engineering must work together to keep down a company's cost of production. This was what Vincent de P Goubeau told the Standards Engineers Society at its annual meeting in New York, June 11. Mr Goubeau is vice-president in charge of materials, Radio Corporation of America, RCA Victor Division. He is also vice-chairman of the Standardization Committee of the National Association of Purchasing Agents. Since 1950 he has been an alternate member of ASA's Standards Council.

Vincent de P Goubeau

Warning purchasing agents that they must not stand in the way of engineering progress, Mr Goubeau emphasized that the purchasing agent can frequently bring information about low-cost substitutes to the attention of the engineering department. These substitutes may be as suitable as the original, or even more so, he said.

The efficient purchasing agent today is becoming increasingly conscious of the importance of keeping costs down through use of standard items instead of "specials." Mr Goubeau declared. He knows that a product can be priced out of competition unless his company has an effective standardization program both for the materials and parts that go into the company's product and in that nonproductive area of a company's operations that supports production. When engineering calls for special items, the purchasing agent is in a position to bring current information on costs, availability, and performance of standard items to the attention of the engineer. The purchasing agent must look to the standards engineer for scientifically planned standards that make "specials" unnecessary, he said.

The committee method of arriving at standards offers an opportunity for free discussion. Mr Goubeau believes this method helps to bring about general acceptance of standards and minimize objections to them.

William L. Healy, General Electric Company, Philadelphia, president of the Society, announced the formation of three local sections of the Society during the past year. These are in Philadelphia; New York City; and Binghamton, New York.

Nominations for re-election of the present officers and election of two new members of the Board of Directors to serve in 1954 were made at the meeting. Election will be by letter ballot of the entire membership. Those nominated were:

For President:
W. L. HEALY
General Electric Company
Philadelphia, Pa.

For Vice-President:
M. S. GOKHALE
RCA Victor Division
Camden, N. J.

For Secretary:
F. M. OBERLANDER
RCA Victor Division
Camden, N. J.

For Treasurer:
H. NUGENT
Manufacturer's Representative
Philadelphia, Pa.

For Directors at Large:
J. R. STEEN
Sylvania Electric Products, Inc
New York, N. Y.

DR JOHN GAILLARD
American Standards Association
New York, N. Y.

# Standards in Industrial Purchasing

by S. H. Watson

Address presented to the Purchasing Agents Association of Philadelphia, May 14

*The National Association of Purchasing Agents' strong position of leadership in standardization is the result of an irrepressible, constantly rising tide of demand from many members, who from time to time were profiting from standardization—more often suffering for lack of it. Like NAPA membership, this demand stemmed from across the full length and breadth of industry and commerce. It was most appropriate, therefore, for NAPA to identify itself with the American Standards Association, where also there are no confining boundaries.* — S. H. Watson

SOME eight years ago, when I assumed my present duties in the RCA Victor Standardizing Division, one of my first and most valuable discussions was with the vice-president and director of purchasing. When I outlined my organization and general plan and sphere of operations it immediately struck a responsive chord. The vice-president had been devoting considerable attention to a study of the selection, requisitioning, and buying practices throughout the Division in the field of staple items. These included canvas gloves, paper towels, liquid soap, and about a hundred other similar articles not used in the product but nevertheless representing a large annual dollar volume. His findings were appalling. The program had not been labeled as one of standardization (although in effect it was) but rather one to eliminate irregularities and promote good commonsense buying practices with a reasonable degree of control. It was immediately obvious to the vice-president that standardization was the answer to this buying problem and that well established standards for each of the offending products would obviate the need for further time-consuming purchasing control programs.

The fulfillment of the company level requirement is the goal of most standardization and the acid test for any standard is the measure of its effectiveness when applied in company operations.

For our industrial purposes a standard is a documentary tool designed to serve repetitive recurring and concurrent industrial needs with the greatest possible efficiency and economy. It is an active, working record of the decisions and recommendations of the best available authorities on a subject—printed in multiple copy—and distributed throughout a company for the guidance of all who may have occasion to use it. The word "guidance" is used advisedly because the mandatory use of standards should be consistently avoided in favor of voluntary use. If the standard is right it will be used. Vincent de P Goubeau, one of your prominent members, covered this point very aptly in an address before the Purchasing Agents Association of Akron, Ohio, last April, when he said:

> "I think it goes without saying that we must maintain an objective viewpoint; that, under no circumstances, can we allow ourselves to stand in the way of progress. If, in our efforts to avoid the use of 'specials,' we create a reactionary atmosphere — if we are so restrictive that we in turn restrict the vision of our engineers, we have defeated our purpose. In such an atmosphere, radar, guided missiles, and other advanced products of today would have been suffocated in their cradles."

In the definition of a standard I mentioned "industrial needs" without qualification. Standards can be established for, and effectively used by, every function of industrial management. Depending upon the subject and purpose, a standard tells one or all of the following: "What to do," "How to do," "What to use," and "How to use." The element of time or the "when," although sometimes a primary function of a standard, is usually at the discretion of the user.

The purchasing agent has some continuing interest in administrative and procedural standards; organization manuals; drafting and engineering manuals; quality control and inspection manuals; warehousing; inventory and warehousing standards; traffic and material-handling procedures; and many others. His principal everyday interest, however, is with the better-known standards covering and controlling the commodities he buys; the components, raw and semi-processed materials used on the production line; the furniture, business machines, and other equipment and supplies required for normal operating purposes.

In the early 1930's, at its Camden, N. J., plant, the RCA Victor Division manufactured radio receivers for several big name outlets, including its own "Radiola" and "Victor-Electrola" lines. The sets were identical except for the cabinet and other external styling appointments.

In the summer of 1931, while vaca-

*Mr Watson, manager of the Standardizing Division of the Victor Division of the Radio Corporation of America, Camden, New Jersey, is a member and past chairman of the Company Member Conference. He was chairman of the Standards Council Catalog Committee, whose work has resulted in the proposal for a project on Industrial Catalogs.*

tioning in the lake region of northern New York, I listened in on a rather heated discussion between two local farmers. Each was extolling the superiority of his radio receiver over the competitive brand of the other. As you may suspect, they were arguing the relative merits of two essentially identical receivers both produced in the RCA Camden plant.

In this little story the principals are farmers, but in any walk of life when two or more people come together we experience divergencies of opinion, likes, dislikes, whims, and fancies. These, compounded to a national scale and reflected in a specific type of product, result in inordinate product variety and a case for standardization: standardization not only to limit variety to actual needs but also to establish the best, all things considered, for the objective selector. Among the "things considered" important procurement factors are always included. It is for this reason that the purchasing agent is indispensable in standardization and a strong ally of the standards engineer.

Habit as a human factor influencing standardization is interesting. Shakespeare in his uncanny, all-inclusive wisdom wrote this, "How use doth breed a habit in a man." One of the leading cigaret manufacturers has spent millions in recent advertising based on the soundness of Shakespeare's thought. Habit is both an asset and a problem in standardization. It is an asset in that people quickly acquire the habit of using standards if they are planned to do the job required satisfactorily, can be applied conveniently, and offer a marked improvement in the field or subject covered. This is usually the case when a new standard is introduced where none previously existed.

Standardization would be a much simpler function in industrial management if it involved only the development of new standards. However, we are living in an age of constant change, constant progress and improvement, and the job of keeping standards dynamic, keeping them abreast of new developments, consumes a major part of the over-all effort. It is here that habit looms as a problem because it must be broken — often in places where it is deeply entrenched — and rechanneled along revised lines. When a new and better standard is introduced to supplant an old tried-and-proven favorite, the going is likely to be rough and the job of selling "painstaking and time consuming." You no doubt remember the national furor which developed in 1949 when RCA introduced the 7-in. 45 rpm phonograph record and its companion automatic record changer, thereby, in a large measure, supplanting a standard of some 40 years standing.

We are currently working on a case in point in the RCA Victor Division. About three years ago the Elastic Stop Nut Company introduced the Roll Pin, a simple fastening device typical of those appearing from time to time which make you wonder why someone didn't think of it long ago. It was quickly recognized as a time and money saver and established as a standard for RCA operations. It replaces other more expensive methods of pinning, some of which have been popular and dependable for 100 years. Today, after two years as an RCA standard, the Roll Pin, although well established, requires continued selling to exploit its potential fully.

The purchasing agent, through his close contacts with manufacturers' representatives and his knowledge of newly introduced products, is frequently in a position to challenge an existing standard, recommend a new and better one, and assist in its development.

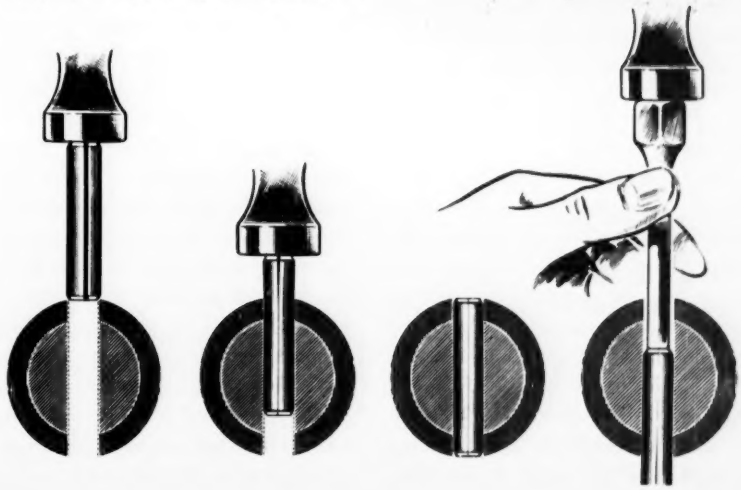
Thus far, the points covered are undoubtedly elementary and repetitious to the purchasing agent, but it is my hope that they may prove helpful in orienting us on a common base line from which we can effectively discuss specific standardization and the requirements confronted in everyday operations; and then, most im-

Radio Corp of Amer, RCA Victor Div

**At right — RCA's 7-inch 45 rpm phonograph record and automatic record changer caused a furor several years ago by breaking the industry's 40-year use of a single standard speed and size.**

**Below — Comparatively new, the Roll Pin has been adopted as standard for RCA pinning operations. Shown is its assembly and disassembly.**

Elastic Stop Nut Corp, Courtesy G. M. Basford Co



portantly, consider the contribution to standardization, the positive action, that should be fundamental to the daily operations of the purchasing agent.

Every purchasing agent uses catalogs and other descriptive literature in the selection of goods and services. If there is a single individual without a complaint in this field, he is indeed tolerant. Offending catalogs have one or more of the following major deficiencies: too large to be housed in available cabinets or files; so small they become lost among other material; metallic devices on the exterior of binders that scratch desks and hands; post and screw type loose-leaf binders that involve time-consuming operations in periodically changing the content; unorthodox and inadequate indexing, challenging the ingenuity of the user; and a hundred other undesirable characteristics with which you are familiar. The Standards Council of the American Standards Association, with strong backing from the National Association of Purchasing Agents, has recently approved a project in this field. The plan is to develop a recommended standard as a guide for catalog sponsors when developing catalogs for industrial customer use. The fact-finding committee, in reporting on its survey made prior to ASA approval, recommended a single-size standard of 8½ x 11 in.

Let's take a good look at this catalog project. Not because of its inherent importance—it's a minor sort of item in itself—but rather from an objective case-study standpoint that may provide clues to standardized solutions to hundreds of other cases—some of major importance—which may well be introduced and spearheaded by NAPA.

Why hasn't something been done about catalogs before this? This question is frequently posed when work finally starts on a standardizing project. In the case of catalogs, as in most others, it is because those who experienced shortcomings—and endured them through the years—suffered in silence. Or, if a complaint was voiced, it was not loud enough, not long enough, and not made in the right place. The purchasing agent is perhaps industry's greatest user of catalogs and therefore the greatest sufferer. When he had an annoying and troublesome experience with a catalog, he probably thought some choice phrases, went on to find his information one way or another, and let it go at that. After all, the purchasing agent is a busy man in industry and doesn't have time to follow up on a hundred and one annoying little details which each day make demands upon his time—particularly when there is no obvious and convenient course of action.

This has all changed. Your association, in its notable action in the field of standardization, took a look at the minutes the purchasing agent spends each day in doing things that are possible of accomplishment in faster, better, uniform, standard ways. These minutes, multiplied by the thousands constituting NAPA membership across the nation, came to a staggering total. As a result, you have your National Committee on Standardization and your membership in the American Standards Association. The obvious and convenient course of action, so sorely needed, is now at your disposal. With it comes a responsibility—to use it at every opportunity. I would recommend that NAPA, nationally and in districts, take steps to make certain that the names and addresses of the members of the Association's Committee on Standardization are well known and kept before you. It might even be advisable to devise a blank form supplied in or with your magazine to make communication with your committee as easy as possible.

And now back to catalogs. Let's assume that, as a result of thousands of communications direct from NAPA members to their Committee on Standardization it became apparent that catalogs constituted a major problem to purchasing agents, and it was imperative that action be taken. In deliberating and planning a program of standardization, the job of your standardization committee may be comparatively simple and straightforward, or it may be complex. If the project involves subject matter completely within the purvue of procurement personnel, such as; A Standard Manual on Basic Purchasing Practices; Standard Blank Forms used in the Purchasing Function; Definitions of Terms Used in Purchasing, and so on; the task of the committee consists merely of establishing a subcommittee of experts drawn from the NAPA membership and assigning it the job of developing the desired standard.

If, however, the subject is one that crosses association and industry lines—and this most often will be the case—the course to be followed is necessarily different. The catalog case is such a subject. From a widespread interest standpoint, it is about as involved as you can get. When you consider all the companies in all industries who sponsor catalogs, the paper and textile companies who supply the bulk of the materials, the printers and publishers who print and assemble the books, the common carriers used in distribution, and the customers throughout industry who use catalogs, you have really covered the waterfront. A standard developed to encourage the features favored by purchasing agents and other important catalog users must be designed to the satisfaction of all parties at interest. If it fails in this it is of little value.

The Committee on Standardization of NAPA goes to work on this type of requirement in the following manner. The American Standards Association is advised of the widespread need, as evidenced by the thousands of comments made by NAPA members, together with an expression of willingness on the part of NAPA to sponsor a project if approved. ASA submits the NAPA request to its Standards Council for consideration and action. The Standards Council, a top unit in the ASA organization, consists of a representative from each of the more than 100 member bodies of ASA, including, of course, your own NAPA appointee. In a single meeting the Standards Council will probably do one of two things: approve the subject for initiation as a standardization project; or, appoint a fact-finding committee to do some desirable preliminary groundwork. When the Standards Council has approved the

(*Continued on page* 287)

# STANDARDS

by Samuel P. Kaidanovsky

## FEDERAL STANDARDIZATION

### Purpose

A new monthly feature on Government standards starts with this issue. The purpose of these monthly articles is to record the major developments and achievements in connection with standards, including specifications, item identification, and inspection and testing, in various levels of Government:— Federal, state, county, and city. Such continuous information will keep Government and industry abreast of new developments in the field of Government standards. It may lead to better understanding and cooperation between Government and industry and result in savings to both.

### Federal Specifications and Standards

Perhaps the most significant development in the history of Federal Government supply was the passage of the Federal Property and Administrative Services Act of 1949. This Act created the General Services Administration. One of its operating units is the Federal Supply Service. The Service, which deals primarily with purchase, warehousing, and disposal of property, is concerned to a great extent with the standardization of materials, equipment, and supplies purchased and used by the Federal Government. The standardization program of the Federal Supply Service is centralized in its Standards Division. This division is responsible for planning, directing, and coordinating all interdepartmental programs for

(*a*) Development, preparation, printing, and maintenance of Federal and Interim Federal Specifications and standards used by all Government agencies;

(*b*) Coordination and maximum utilization of Government materials inspection and testing activities;

(*c*) Cooperation in the development of a uniform catalog system;

(*d*) Standardization of common-use items purchased by the Federal Government;

(*e*) Coordination of Government standardization activities on such items.

Through effective standardization of commodities, unnecessary and uneconomical types, classes, and varieties of commodities are eliminated, with accruing benefits and savings. Close, working arrangements with the activities of the military and civil departments have been developed, thus eliminating duplicate work.

### How Federal Specifications and Standards Are Prepared

Federal specifications and standards are prepared in the following ways:

(*a*) Through committee operation (This method is being progressively discontinued.);

(*b*) By assigning the responsibility to any Government agency having particular technical competence and procurement interest in the item covered by the specification;

(*c*) By the staff of the Standards Division.

In the preparation of Federal specifications and standards, industry and technical society specifications are being used — by adoption or reference — to the maximum extent practicable.

### Interim Federal Specifications

Greater emphasis has been placed recently on the development of Interim Federal Specifications. The procedure for the preparation of these interim specifications follows the same pattern as for the preparation of Federal Specifications. An effort is being made to adopt as Interim Federal Specifications—

(*a*) Up-to-date Government departmental or agency specifications;

(*b*) Nationally recognized industry and technical society specifications which appear satisfactory for Government-wide use.

### Military Specifications Applicable for Civil Use

In order to avoid unnecessary expenditure and duplicate work, specifications and standards developed by the military departments, applicable for civil use, are selected periodically by the General Services Administration and listed in the *Index of Federal Specifications and Standards*. Such military specifications and standards eventually will be converted into Federal specifications and standards.

### Index of Federal Specifications and Standards

An *Index of Federal Specifications and Standards* is issued on January 1 of each year with monthly cumulative supplements. The *Index* lists the following:

(*a*) Federal specifications and standards, including Interim Federal Specifications;

(*b*) General Services Administration (GSA) specifications (These specifications are gradually being replaced by Federals.);

(*c*) Civil and military specifications and standards applicable for use by civil agencies.

### Mandatory Use of Federal Specifications and Standards

Federal specifications and stand-

*Mr Kaidanovsky, Consulting Engineer, is former Chairman, Federal Interdepartmental Standards Council; technical consultant, Federal Specifications Board; and editor,* Standards World.

ards are prepared under the direction of, and are promulgated by, the Administrator of General Services. Under the provision of the Federal Property and Administrative Services Act of 1949, as amended, Public Laws 152 and 754, Eighty-first Congress, the use of Federal Specifications and their amendments is mandatory upon all Federal agencies.

### Optional Use of Interim Federal Specifications

The use of Interim Federal Specifications is mandatory upon the Federal agencies listed in the preamble thereto and optional for all other Federal agencies. Their use is recommended by the General Services Administration wherever possible in order that their application may provide experience for GSA to use when preparing Federal Specifications.

### Recommended Use of Selected Military Specifications

Military specifications listed in the *Index of Federal Specifications* and its cumulative supplements are applicable for civil procurement and are recommended by the General Services Administration for use by all Federal agencies.

### Where the Index of Federal Specifications and Standards Can Be Obtained

This Index, including cumulative supplements for 1953, is for sale on a subscription basis by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price $1.75, 50 cents additional for foreign mailing.

### Where Printed Federal Specifications and Standards Can Be Obtained

Printed Federal specifications, standards, specification supplements, revisions, amendments, cancellations, and notices listed in the *Index* and its supplements may be obtained at the prices indicated upon application to the Business Service Center, General Services Administration, Regional Office Building, Seventh and D Streets, S.W., Washington 25, D. C. Applications should be accompanied by check, money order, cash, or Government Printing Office coupons.

### Where Single Copies of Federal Specifications Required for Bidding Purposes Can Be Obtained

Single copies of such specifications are available without charge at the Business Service Centers of the General Services Administration Regional Offices listed below. Prices of additional copies may be obtained from Regional Offices.

### Where Copies of Interim Federal Specifications and GSA Specifications Can Be Obtained

Such specifications are available without charge from the Business Service Centers of the General Services Administration Regional Offices listed below.

**General Services Administration Regional Offices**

Region 1: Room 620, Post Office and Courthouse, Boston, Mass.

Region 2: 250 Hudson Street, New York 13, N. Y.

Region 3: General Services Administration Regional Office Building, Seventh and D Streets, S.W., Washington 25, D. C.

Region 4: Room 833, Peachtree-Seventh Building, 50 Seventh Street, N.E., Atlanta 5, Ga.

Region 5: Room 575, U. S. Courthouse, 219 South Clark Street, Chicago 4, Ill.

Region 6: Room 1800, Federal Office Building, Kansas City 6, Mo.

Region 7: 114 Commerce Street, Dallas 2, Texas

Region 8: Building 41, Denver Federal Center, Denver, Colo.

Region 9: 49 Fourth Street, San Francisco 3, Calif. Branch Office: Western Pacific Building, 1031 S. Broadway, Los Angeles 15, Calif.

Region 10: Federal Office Building, 909 First Ave, Seattle 4, Wash.

### Use of Industry Specifications and Standards

In some of the recently developed Federal specifications, a greater use is being made of industry specifications by reference. For example, Federal Specification OO-s-236a, 17 February 1953, for Sawing Machine; Circular, Woodworking, Single Arbor, Floor Mounted, 10-inch and 16-inch inclusive, refers to:

> American Standard O1.1-Safety Code for Woodworking Machinery, the National Electrical Code, and to ASTM Designation A7.

Federal Specifications W-F-972, 16 February 1953, for Fans, Circulating, Column (Electric Rigid Blades, Nonoscillating, Not for Marine Service), and W-F-95, 16 February 1953, for Fan, Circulating, Radial Discharge, both refer to:

> Underwriters' Laboratories Standard for Motor Operated Fans and the American Standard Z24.3, Sound Level Meters for Measurement of Noise and Other Sounds.

Interim Federal Specification OO-L-00127 (USAF), February 4, 1953, prepared by the Air Force, for Lathe, Engine, Floor Mounted, Solid Bed, 12, 14, and 16-inch Rated Swing, Geared Head Drive, Precision, refers to the following American Standards:

B5.1, T-Slots—Their Bolts, Nuts, Tongues and Cutters;
B5.9, Spindle Noses for Tool Room Lathes, Engine Lathes, Turret Lathes, and Automatic Lathes;
B5.10, Machine Tapers, Self-Holding and Steep Taper Series;
B5.22, Single-Point Tools and Tool Posts;
B6.1, Spur Gear Tooth Form;
C1, National Electrical Code (NBFU 70)

Interim Federal Specification SS-P-00381 (GSA-FSS), April 2, 1953, prepared by the General Services Administration, Federal Supply Service, for Pipe; Pressure, Reinforced Concrete, Pretensioned Reinforcement (Steel Cylinder Type); refers to the following ASTM specifications:

A31, Tentative Specification for Boiler Rivet Steel and Rivets;
A185, Specification for Welded Steel Wire Fabric for Concrete Reinforcement;
A245, Tentative Specification for Heavy Gage Structural Flat Hot-Rolled Carbon Steel Sheets;
A283, Tentative Specification for Low and Intermediate Tensile Strength Carbon Steel Plates of Structural Quality (Plates 2 inches and under in thickness);
A15, Billet-Steel Bars for Concrete Reinforcement;
A303, Tentative Specification for Hot-Rolled Carbon Steel Strip for Structural Quality;
C39, Method of Test of Compressive Strength of Molded Concrete Cylinders;
American Iron and Steel Institute's (AISI) Steel Products Manual for Hot-Rolled Steel Bars, Section 8, AISI 1012.

These examples show the recent trend of referencing, in Federal specifications, applicable specifications and standards of nationally recognized industry and technical societies. An extension of this practice by Government, Federal and local, would result in great benefits and savings to both Government and industry.

National Bureau of Standards

The National Bureau of Standards' several hundred laboratories are housed in some 70 buildings on 68 acres of land.

# The National Bureau of Standards–Its Staff's Credo

Undoubtedly many who have read recent newspaper stories about the National Bureau of Standards have wondered about the functions and the methods of operation of the Bureau. In an address presented before the American Physical Society in Washington, D.C., May 1, Dr A. V. Astin, director, explained the views of the Bureau's staff, their philosophy, and their belief in the significance of their work to the nation's welfare and security.

Dr Astin's analysis of the relationship of the fundamental standards maintained by the Bureau, the Bureau's basic research functions, and the philosophy under which its activities are carried out is of particular interest to everyone concerned with the development and use of standards. The main part of Dr Astin's speech is reproduced below.

THE Bureau staff believes first of all in the importance of scientific research as a means of intellectual and spiritual advancement, as the foundation of our technological economy and high standard of living, and as the bulwark of our national security.

We believe in the teachings of Galileo that theory and hypothesis must conform to the results of experimentation and observation. We believe in the philosophy of Lord Kelvin that basic understanding in science depends on measurement—the reduction of observation to numbers. We believe further that the reduction of observation to meaningful numbers requires the development and maintenance of uniform standards for physical measurement, and that this need provides the first and primary reason for the Bureau's existence.

The development and maintenance of the standards for physical measurement, with the associated calibration procedures, is to us a challenging and dynamic activity. This standards work must not only keep abreast of the expansion of the frontiers of science, but in the older regions there is a continuing demand to increase the precision and reliability of measurement.

We believe that there is romance in precision measurement, and that ability to extend the absolute accuracy of measurement by one decimal place frequently demands as much in ingenuity, perseverance, and analytical competence as does the discovery of a new principle or effect in science. We believe further that many of the important advances in science are possible only through the availability of instruments of high precision, which enable the measurement of small differences or minute effects.

We stress reliability and accuracy in our operations and in checking and rechecking our results. In fact, an inadvertent error of ten parts in a million (representing a whole wave length of light) in a length calibration made some months ago was a cause of grave concern to the Bureau's management, and there was no rest until the cause of the error was located, and remedial action was taken to prevent a recurrence.

We stress objectivity and fairness in our operations and attempt to insure them by a willingness to accept the results of well-planned, reproducible experiments and the logical conclusions therefrom. We follow as far as possible the established or clearly defined observational techniques and analytical procedures of science but welcome the opportunity to evaluate and accept new ideas and techniques. We believe that scientific conclusions should be made only by following such procedures. We believe further that complete freedom of inquiry in scientific investigation is essential to insure not only the soundness of a particular set of results or conclusions but also the development

and healthy progress of science itself.

Related closely to this is our conviction that a substantial portion of the program of any sound scientific or technical laboratory should be devoted to fundamental or nonprogrammatic research. Such provisions afford an opportunity for the more imaginative scientists to explore freely ideas of their own choosing and help to provide vigor and strength to the entire laboratory.

We believe that communication between scientists through discussions, meetings, and visits between laboratories is essential to the development and evaluation of new ideas. For there is no ultimate authority or supreme court in science except that resulting from general acceptance through free interchange. The results of a particular experiment are not considered established unless they can be reproduced by other observers, in other laboratories, and with different equipment. The conclusions of a theory or hypothesis are not considered valid until they survive the scrutiny and criticism of other analysts and/or conform to the results of experience.

Therefore, we believe that the broad dissemination and publication of the results of research investigations are essential to the healthy progress of science to be limited only by strict considerations of national security.

Because of the potential importance of the results of scientific work to the general public, we believe that scientists have a serious responsibility to interpret or to translate their major findings into terms that can be generally understood. In this connection, however, it is imperative that there be no compromise with accuracy since altering or blurring the facts in the interest of popularization would probably be worse than no popularization at all.

Hence, the Bureau, in rendering scientific and technical advisory services to other agencies of the government, particularly when the contacts in the other agencies are nontechnical people, has recognized its responsibility for evaluating the results of its findings in objective and nonambiguous terms.

In our advanced technological economy we believe that there are many ways in which a laboratory like the National Bureau of Standards can render valuable services to other agencies of the government. For example, we believe that appreciable savings in government procurement operations are possible through the intelligent use of technical purchase specifications and acceptance testing based on carefully planned laboratory investigations.

We believe that there are many areas in government operations where the application of modern technology can bring about substantial increases in operating efficiency. Electronic information-processing machines afford a notable example.

We believe that the development of standard practices, such as safety codes, has resulted and will continue to result in substantial savings in human life, time, and money both within and out of the government. The development of such codes generally involves, however, extensive knowledge of the properties of materials, devices, and structures under a variety of environmental conditions.

We believe that in times of national emergency the facilities and resources of the National Bureau of Standards should be as far as possible placed at the disposal of those charged with the country's defense. This was in fact done during the two world wars. Even during peacetime or periods of limited emergency there is an appreciable utilization of the Bureau's facilities by the defense agencies. Since World War II, and particularly since the Korean episode, these activities have grown substantially until now more than three-quarters of the Bureau's staff are working on problems for the Department of Defense. This means that the general character of the Bureau's work and the nature of its fiscal support is markedly different than it was fifteen or twenty years ago. Whether or not this is a desirable utilization of the National Bureau of Standards under the present conditions is undoubtedly a question which will be considered by one of the special study committees. We will welcome their recommendations and advice on this matter.

We believe that in order for the National Bureau of Standards to carry out its various functions and activities we must have an alert and competent staff, suitable equipment and facilities, and an environment favorable to scientific investigation and methodology. This environment or climate essentially means the provision of the opportunity to practice the beliefs I have been stating.

We believe that there should be suitable recognition and promotion of the more productive and creative scientists together with a careful weeding out of the nonproductive. We believe that the highest positions in the civil service should be available to the most outstanding scientists and engineers and that it should not be necessary to encumber them with administrative responsibilities in order to attain such positions. This principle is fortunately recognized by the Civil Service Commission.

We believe that we should bring in new blood by the recruitment and training of young scientists and by promoting them to more senior positions as rapidly as they develop and opportunities open. We further believe that education should not cease when an individual joins our staff, and we take pride in the graduate school that has been conducted by and for our employees for more than forty years.

We take pride in our many illustrious alumni now serving in responsible positions in industry and elsewhere in government, and we have reason to believe that they value the experience gained as members of the Bureau's staff.

We take pride in the concept of service, in providing assistance to science, to industry, and to government.

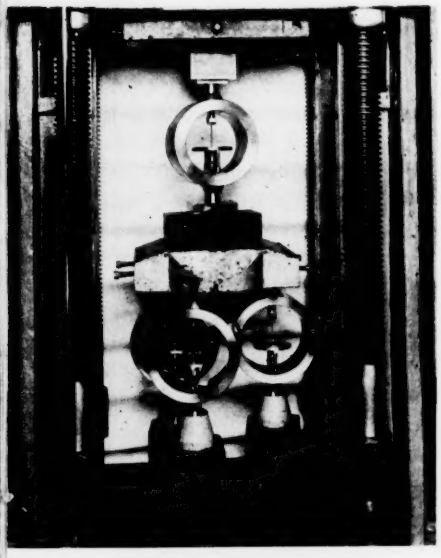
We believe in the dignity of the government service and further believe that the primary incentives and rewards of a civil service scientist are not financial but rather stem from the pride in organization and its functions and from the sense of satisfaction which comes from participating, even in small ways, in the solution of problems of national importance.

We believe also that for Federal employees loyalty to our country includes, in addition to the more com-

monly accepted values, loyalty to the institution for which we work and to its traditions, and loyalty to the administration which shapes its policy.

These represent some of the tradition and creeds of the staff of the National Bureau of Standards. I hope thereby to have given you some impression of why the staff is so intensely loyal to the organization and our country, and why the staff is so interested in the Bureau's future. We know that the Bureau's work is critical in the nation's scientific and technological progress. We know that the opportunity to assist in attaining these goals affords a high degree of intellectual, moral, and spiritual satisfaction.

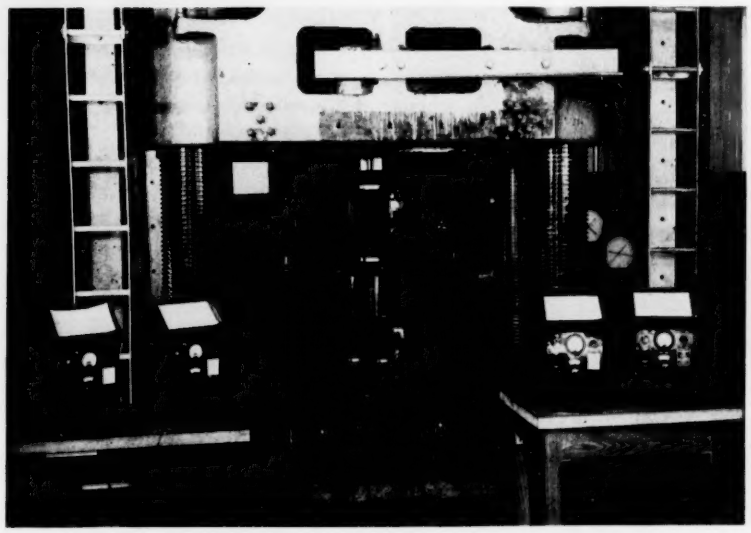
Recent development of 3-million-pound-capacity compression dynamometers by the National Bureau of Standards will permit standardization of the largest materials-testing machines in existence. With these dynamometers, forces up to 12,000,000 pounds, or 6000 tons, can be accurately measured. The Bureau's program for many years has provided means of verifying the accuracy of tension and compression testing machines, widely used by industrial plants and laboratories. Machines vary in size from small devices for testing small samples of materials — rubber, textiles, plastics — up to huge machines capable of crushing a steel girder or a concrete cylinder several feet in diameter.



At left — one step in the calibration process — a 200,000-pound-capacity proving ring is calibrated by loading it against three 100,000-pound rings. Each of the smaller rings has been calibrated by dead weights.

To calibrate a 3-million-pound dynamometer (shown here, below, set up in the NBS 10-million-pound testing machine), the device is loaded against three one-million-pound dynamometers previously calibrated by the method shown above. Electrical indicators are on tables in foreground.

Photos Courtesy National Bureau of Standards



## Bryan, Moreland on Standards Council For ASTE

G. F. Bryan of Pontiac, Michigan, has been appointed representative of the American Society of Tool Engineers on ASA's Standards Council. Mr Bryan will fill the vacancy resulting from the resignation of R. C. W. Peterson, of the Peterson Engineering Company, Toledo. Mr Peterson, chairman of the National Standards Committee of ASTE, had held this post since June, 1951. He retains his position as secretary of Sectional Committee B52 on Classification of Materials for Tools, Fixtures and Gages.

William Moreland, assistant to the works manager, Greenlee Brothers and Company, Rockford, Illinois, has been named an alternate ASTE representative on the Council, replacing O. E. Harvey, of the Harvey Tool Service, Cleveland. Mr Moreland also succeeds Mr Harvey as ASTE member of the Mechanical Standards Board, a job the latter had held for two years.

## ISO Actions on Abbreviations, New Committees

At its meeting July 9, the Council of the International Organization for Standardization adopted a new ISO Recommendation and set up two new technical committees.

The new Recommendation, ISO Recommendation R4, provides an internationl code for abbreviating titles of periodicals.

The new Technical Committee on Aromatic Hydrocarbons will be known as ISO/TC 78. The secretariat has been assigned to the United Kingdom.

The new Technical Committee on Safety Colors, ISO/TC 80, will work under the leadership of the Netherlands member body. Among standards that will be considered by this committee is American Standard Safety Color Code for Marking Physical Hazards, Z53.1-1945.

# ISO/TC 11—Boilers Meets in Paris

## ASME Boiler Code Committee Sends Delegation

THE first meetings of the international technical committee on unification of boiler codes, ISO/TC 11, were held in Paris, May 11 to 20, 1953. A strong American delegation was present.

The technical work involved in American participation in ISO/TC 11 is handled by the Boiler Code Committee of the American Society of Mechanical Engineers. The committee agreed to take charge of the work in 1949, on request of the American Standards Association, which holds the secretariat for this project of the International Organization for Standardization. Technical Committee 11 has as its object to develop an international boiler code, so that boilers built in one country will be acceptable for installation in other countries as well.

Some countries now have their own boiler codes, others have none, and some that are in existence are inadequate to cover modern steam generators. The lack of uniformity of boiler codes creates many problems which hinder the development of international trade in boilers. In 1950, with the cooperation of a British delegation, a Draft Proposal was prepared and sent to all nations interested in this standardization project for their comments.

At the first meeting of the committee, in May, 76 delegates were present from Austria, Australia, Belgium, France, Germany, Holland, Italy, Spain, Switzerland, the United Kingdom, and the United States.

The American delegation was led by F. X. Gilg, the Babcock & Wilcox Company. It included John L. Menson, Combustion Engineering Inc; Henry H. Hemenway, Foster Wheeler Corp; E. O. Bergman, C. F. Braun & Co; C. W. Wheatley, A. O. Smith Corp; D. L. Royer, Ocean, Accident & Guarantee Corp; H. B. Oatley, chairman, ASME Boiler Code Committee; and C. O. Myers, National Board of Boiler and Pressure Vessel Inspectors. Mr Oatley was elected chairman to conduct the meetings. "Having in mind that ISO has some 70 technical committees in existence, we were deeply impressed when informed that this was the largest ISO meeting ever held, a tribute to the interest in boiler construction all over the world," declares the delegation's report. "This was the first time that boilermakers and engineers from so many nations had an opportunity to sit around a table to discuss their mutual problems.

"The great interest shown in boiler construction indicates that there is a real need for an international boiler code," the delegation reported. "The cooperative spirit among the various delegations in arriving at compromises not yet permitted by their respective boiler laws indicates that the prestige of an ISO Code or Recommendation would be very strong and that they really want boiler rules and regulations which would have international standing."

Agreements were reached on 12 Draft Resolutions, including a design formula for cylindrical shells, rules for riveted construction, and inspection and stamping. After some discussions in working groups, three subcommittees were recommended to continue discussions on: materials; allowable stresses and design formulas; welding.

These subcommittees will carry on by correspondence and local meetings the work that was started at the Paris meeting. To make it easier to get this work accomplished without transatlantic travel, Germany was invited to take the Secretariat of the Committee on Materials; France, the Committee on Allowable Stresses and Design Formulas; and The Netherlands, the Committee on Welding.

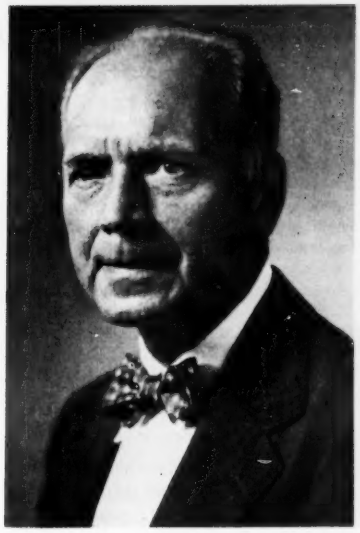
Since the ASME Boiler Code Committee handles the technical work of

(*Continued on page* 286)

Top row, left to right: D. L. Royer; Dr. E. O. Bergman; C. W. Wheatley; H. Hemenway; C. O. Myers; J. L. Menson, secretary of delegation. Seated, left to right: Jean Duval, Technical Director, French standards association (AFNOR); Dr. H. B. Oatley, chairman of meetings; Henry St. Leger, General Secretary, ISO; F. X. Gilg, leader of American delegation.

Courtesy *Mechanical Engineering*

# GAILLARD TO BECOME CONSULTANT ON STANDARDIZATION



The New York Times Studios

**"In modern management standards should be planned. Progressive executives now are looking for Organized Standardization." — *John Gaillard***

EXECUTIVE management can call on expert help in solving standardization problems beginning January 1, 1954. As of that date Dr John Gaillard, mechanical engineer on the staff of the American Standards Association and lecturer at Columbia University, will devote full time to consulting work in standardization.

Dr Gaillard will advise individual business enterprises regarding setting up standardization in their companies. This will include organization of the work and training of necessary staff in the principles and technique of developing standard specifications.

The purpose of organized standardization in business, Dr Gaillard believes, is "to serve as the key to coordination of departmental activities. This harmonizing effect reduces the pressure of executive work, smoothes the company's operations, and pays handsome dividends on capital invested." Standardization, contrary to an erroneous concept that it does away with individuality, actually is a vital and constructive force in business management, leaving ample room for variety of color, style, and design.

Since 1947, Dr Gaillard has lectured on standardization at Columbia University. He has also held semiannual seminars for men in industry, attended by more than two hundred representatives from over 120 organizations, including American and Canadian companies, all branches of the U. S. Armed Forces, foreign national standards bodies, trade associations, the National Bureau of Standards, and the Massachusetts Institute of Technology.

The Gaillard Seminars led to the demand of several companies for additional and private counsel on their specific standardization problems. Heretofore, Dr Gaillard's ability to comply with these demands was limited, due to his numerous activities with ASA. In 1954, however, he will extend his services to industry on problems of domestic and international standardization.

In the latter connection Dr Gaillard will be able to offer three foreign languages which he speaks and writes fluently: French, German, and Dutch.

The nature of standardization problems, Dr Gaillard asserts, ranges from teamwork in an individual plant to agreements in the international field. In his work at ASA, Dr Gaillard has become intimately acquainted with all phases of standardization. He has guided ASA projects from their initiation to the final approval of American Standards, and has represented American industry as a delegate at international conferences in the United States, Canada, and Europe.

Dr Gaillard believes that, to be most effective, standards must be developed by cooperation among those who use them. These are the people who know most about existing requirements and how they can best be met in practice. However, "the *organization* for standardization — that is, the administrative machinery for producing standards — must be set up by authority and with strong support of top management."

Graduated as a mechanical engineer from the Institute of Technology at Delft, The Netherlands, John Gaillard received his degree as Doctor of Technical Science from the same Institute upon submitting a thesis largely devoted to the problem of company standardization.

Before coming to ASA, Dr Gaillard was a patent attorney in The Netherlands, associate director of the Netherlands Standards Association, and an associate of Frank B. Gilbreth, the management consultant. He is a member of the American Society of Mechanical Engineers, the Society for Advancement of Management, the American Society for Quality Control, and the Standards Engineers Society.

In serving as counsel to industry, Dr Gaillard will keep in mind two basic principles. One is that "standards should be strict enough to give the desired result, but otherwise be as flexible as possible, to leave greatest freedom in compliance." The other principle is that "the system by which standards are developed must be carefully tuned to the character of the individual enterprise."

# Special Rules for Residence Elevators

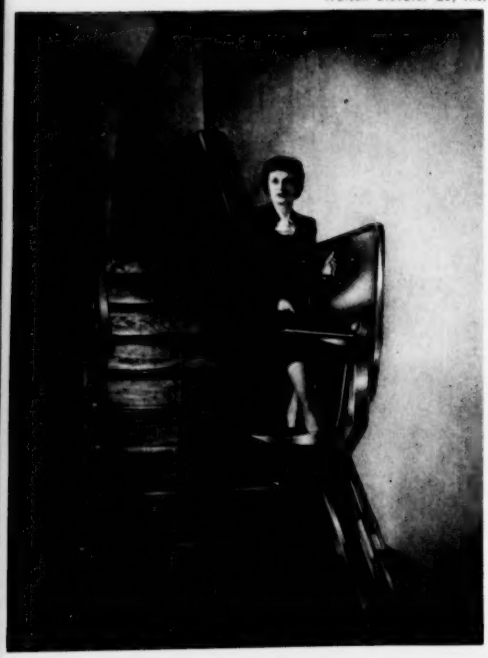
**by G. H. Reppert**

*Mr Reppert is Code Engineer of the National Elevator Manufacturing Industry Association, Inc. For 41 years he was associated with the Otis Elevator Company in connection with construction, sales, and engineering. He is a member of the Sectional Committee on Safety Code for Elevators, Dumbwaiters, and Escalators, A17; the Sectional Committee on Safety in the Construction Industry, A10; and the Committee on Model Laws and Ordinances, Z56.*

WHEN the head of a family wants to install a small elevator in his private residence, he can now follow a special safety code recently developed for this particular purpose. The new code covers the installation of small, electric-power, passenger elevators primarily used for the convenience of elderly persons or invalids. Elevators complying with the new code can be installed at a considerably lower cost than if they should have to comply with the more rigid standards needed for elevators used in public buildings. The new standard, however, provides safeguards necessary for the type of building and the service for which these elevators are being used.

**Rules for installation of inclined, power passenger lifts on stairways of private residences are included in American Standard A17.5-1953. In the type of lift shown, ascent and descent are controlled by operation of push buttons.**

Watson Elevator Co, Inc.



The new rules also cover installation of inclined, power passenger lifts on stairways of private residences. Up to the present time, no rules have been available for this type of equipment.

These special rules also apply to installation of small elevators in multiple dwellings where the elevator or lift provides access only to a private residence, and only if it is so installed that it is not accessible to the general public or to other occupants of the multiple dwelling.

The type of elevator covered by the new standard is very limited in size, speed, load, and travel. Its use is limited to the members of a single family, and it is under the control of the head of the family. For these reasons, the code does not require the same rigid standards as are necessary in the case of elevators installed in buildings of other types and used by the general public. These are, of course, subjected to much more severe and frequent service.

Due to structural conditions in most existing private residences, the installation of a standard-type enclosed elevator hoistway is either impossible or impractical, and the code therefore permits the installation of private residence elevators in open stairwells or other locations, without enclosures in the lower story, and provides for the necessary safeguards in such cases.

It should be especially noted that the rules of this code do not apply to all power elevators installed in private residences, but only to those which meet the definition for "Private Residence Elevator."

The code defines the terms, "Private Residence," and "Private Residence Elevator," and "Private Residence Inclined Passenger Lift," as follows:

"*Private Residence:* A private residence is a separate dwelling or a separate apartment in a multiple dwelling which is inhabited only by the members of a single family.

"*Private Residence Elevator:* A private elevator is a power passenger electric elevator, installed in a private residence, and which has a rated load not in excess of 700 pounds, a rated speed not in excess of 50 fpm, a net inside platform area not in excess of 12 square feet, and a rise not in excess of 50 feet.

"*Private Residence Inclined Passenger Lift:* A private residence inclined passenger lift is a power lift installed on a stairway in a private residence for raising and lowering persons from one floor to another of the building."

These new rules were developed by ASA Sectional Committee A17 on Safety Code for Elevators, Dumbwaiters, and Escalators. The sectional committee believes that the publication of these rules will supply a long-felt need.

The new American Standard Safety Code for Private Residence Elevators, A17.1.5-1953, was prepared by Sectional Committee A17. This committee is sponsored by The American Institute of Architects; National Bureau of Standards; and The American Society of Mechanical Engineers.

The new code will eventually appear as Part V of a revised edition of the American Standard Safety Code for Elevators, Dumbwaiters, and Escalators. It is expected that this revision will be completed and issued about July 1, 1954.

In the meantime, the new American Standard A17.1.5-1953 is available at $1.00 per copy.

# HOW DETROIT EDISON HANDLES ITS SPARE PARTS PROBLEM

CONCERNED because of its large investment in spare parts and special maintenance items, the Detroit Edison Company a year ago appointed a special committee to study the problem. Now, as a result of the committee's activities, a new policy has been agreed upon. Those concerned believe that much has already been accomplished by various departments in elimination of nonessential spare parts.

Discussions during the several meetings held by the committee brought agreement among the members on three essential steps:

1. Development of a clear, concise spare parts policy to guide all company departments in their future procurement of spare parts;
2. Analyses of present stocks of spare parts (based upon the proposed Spare Parts Policy);
3. Development of concise definitions for spare parts and maintenance items to facilitate classification of these items.

The policy as finally agreed upon is as follows:

### SPARE PARTS POLICY

The value of the spare parts and special maintenance items stocked in this Company and the cost of maintaining them is very appreciable. Every effort should be exerted to reduce the amount of spare parts to a practical minimum and to keep them at a minimum consistent with proper operation.

Therefore as a policy and guide for all department heads and others who are held responsible for the proper operation of their departments and the equipment therein, the following policy is formulated:

### POLICY

1. No spare parts should be stocked to protect the Company against double contingencies.
2. No spare parts should be maintained for equipment when the parts are readily available.
3. Where adequate reserve capacity has been built into a plant, station or system — spare parts should *not* be carried in stock when the probability of a second failure at that location is remote before the original failure can be repaired.
4. Spare parts should be pooled and the quantity carefully analyzed whenever two or more plants or stations require identical parts.
5. Spare parts shall be initially stocked only with the approval of the Mgr of Operations.
6. It will be the responsibility of each department to review their minimum requirements at least once every 2 years. This may be accomplished whenever reordering, whenever equipment is declared obsolete, or by a periodic review.
7. Sources of supply for spare parts items should not be unduly limited. Wherever possible, spare parts items should be established in such a way that parts can be obtained from several vendors.

### DEFINITIONS

In terms of this policy the following definitions apply:

A *spare part* is a part which must be stocked to take care of an emergency arising from a possible failure.

A *maintenance* item is an item whose rate of "wear-out" or depreciation can be approximated and which must be stocked in anticipation of the predicted need.

The Detroit Edison Company believes that much money can be saved by its study of spare parts and special maintenance items.

The company is also interested in what other companies have found in their studies and in the method they use to keep their stock of spare parts at an absolute minimum. Any companies that have studied the spare parts problem are invited to comment or offer constructive criticism on the program outlined above.

# JOINT BUILDING CODE COMMITTEE REPORTS

AT its sixteenth meeting, July 10 and 11, the Joint Committee on Building Codes completed consideration of precautions to be taken during building operations and worked further on the subject of light, ventilation, and sanitation. Recommendations are to be presented to member organizations.

The committee also appointed new subcommittees on heights and areas, concrete construction, wood construction, fire protection requirements, fire protection equipment, and light and ventilation.

The Joint Committee again emphasized that its purpose is to suggest reductions in the differences among the existing nationally recognized model building codes and not to write a new code.

Its purposes can be analyzed and summarized as follows:

1. To consider the nature and extent of differences in various recommended codes and the possibility of reducing or eliminating these differences through voluntary action.
2. Not to write a building code. The committee has no authority to write a building code, nor does it have any intention of doing so.
3. To encourage continued independent production of recommendations by qualified organizations as the best assurance of progress in the building field.
4. To encourage cooperative effort to reduce or eliminate unnecessary differences in recommended codes as a useful public service.
5. To recognize that climatic conditions and other causes may justify differences in different regions.
6. To suggest to its member organizations those building code requirements which have promise of being generally acceptable, leaving final action to the discretion of these organizations.

The seventeenth meeting of the Joint Committee is scheduled for Los Angeles on October 3 and 4, 1953.

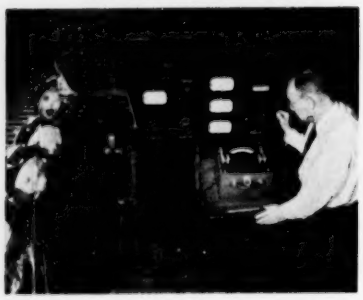
Member organizations of the committee are: American Standards Association; Building Officials Conference of America, Inc; Housing and Home Finance Agency; National Board of Fire Underwriters; National Bureau of Standards; National Fire Protection Association; Pacific Coast Building Officials Conference; Underwriters' Laboratories; U. S. Department of Commerce, Construction Division.

Observers for the Southern Building Code Congress and for the Associate Committee on the National Building Code of Canada, of the National Research Council of Canada, attended the last meeting.

# DON'T OPERATE *your* INSTRUMENTS IN THE DARK

Many characteristics contribute to the precision of electrical indicating and recording instruments. Dependability of these characteristics may spell the difference between dependable plant performance and unpredictable, costly breakdowns and delays where assembly operations or processes are controlled by recording and electrical instruments. You don't have to operate your instruments in the dark — without the information you need to assure accurate and dependable performance. Essential performance characteristics are detailed and tabulated for you —

**AMERICAN STANDARD C39.1-1951 for INDICATING INSTRUMENTS**



Indicating instruments used in check test on product line alternating current motors

Now for the first time

**DIRECT-ACTING RECORDING INSTRUMENTS AMERICAN STANDARD C39.2-1953**

Requirements tabulated in both standards for easy checking include rated accuracy, position influence, external temperature influence, sustained operation influence, dielectric test, frequency influence, magnetic platform effect. And for the first time, requirements limiting leakage current are given in C39.2-1953 to protect users.

**American Standards Association**
70 East 45th Street, New York 17

Enclosed is ..... (Bill me .....) for American Standard Electrical Indicating Instruments, C39.1-1951 at $1.60 ..... copies

American Standard Direct-Acting Recording Instruments, C39.2-1953 at $0.75 ..... copies

Name .....

Address .....

City ..... Zone ..... State


## WHAT IS YOUR QUESTION?

**Can you tell me what the number AN-B-7 refers to and how I can get a copy of the document? Information I have refers to Bronze rod, Type 1, Composition A.**

This refers to an Army-Navy specification that is now a military specification — MIL-B-5687A. For a copy of this document write to Headquarters, Wright Air Development Center, WCXEP-2, Wright-Patterson Air Force Base, Ohio.

**Is a portable insulated barricade for use in substation maintenance work available on the market?**

ASA does not know of such an item. However, any shop could undoubtedly fabricate such a barricade by using rubber insulating blankets or wooden barriers made of plywood suitably protected from the weather with some substance such as spar varnish. In this connection there is an American Standard on Rubber Insulating Blankets, J6.4-1950, concerned primarily with performance requirements for such blankets.

**The stucco finish on a house I built 27 years ago is now in poor shape. Can you tell me how to have it checked to determine the cause?**

ASA does not carry on research or investigative work. Although it does have information on many problems of standardization, it has none in connection with stucco. The National Bureau of Standards might be a source for this information.

**I cannot locate information concerning the standardization of electrical motor frames. Can you help me?**

This information is contained in the NEMA Standards for Motors and Generators, which can be obtained from the National Electrical Manufacturers Association. Much of this same information was also contained in the American Standard for Rotating Electrical Machinery, C50-1943. This standard is now under revision.

## DRYCLEANERS UNDULY BLAMED FOR FABRIC FAILURES

From "The Longer View of ASA's Rayon and Acetate Standards," by Albert E. Johnson, Director of Trade Relations, National Institute of Drycleaning, presented at the 44th Annual Meeting of the American Home Economics Association, June 26, 1953.

"Our interest in performance standards goes beyond just the cleaning characteristics of fabrics. Oddly enough, the cleaner is frequently held responsible for service shortcomings which do not relate to cleaning operations. These include most of the specifications covered in the new standards,[1] such as fume fading, perspiration damage, sunfading, etc. The latter, for example, accounts for about 10 percent of all 'change of color' problems we investigate for our members. In other words, of the some 400 such problems received each month, 10 are sunfadings in which drycleaning was thought to be the cause of fading. Fume fading is a similar problem that frequently runs more than 40 a month. The reason our members are charged with these problems by their customers is that fadings become more noticeable when a garment is cleaned. But that is not as important as the fact that such a volume of complaint incidence actually exists apart from strictly cleansing problems to plague the drycleaner-consumer relationship.

"In these situations, standard definitions and specifications are valuable tools for determining the facts with which to properly fix responsibility. This is an important function of standards, and in this respect alone they serve a very useful purpose."

[1] American Standard Minimum Requirements for Rayon and Acetate Fabrics, L22.

# Standards From Other Countries

*Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received. For the convenience of our readers, the standards are listed under their general UDC classifications. Initials in right-hand margin are standard symbols used with the identifying numbers of the standards. Please refer to these symbols and numbers when requesting copies.*

### 614.84 FIRE. FIRE BRIGADE

***Germany*** — ***DIN***

Two types of reduction coupling • 14342/43
Suction basket • 14362

### 621.88 MEANS OF ATTACHMENT. FASTENINGS

***Austria*** — ***ÖNORM***

8 standards for different types of wrenches • M4901/03
6 standards for different nuts, metric, split cotter pins • M5242/43, -5247/48, -5249, -5404

***Czechoslovakia*** — ***CSN***

4 standards for washers and lockwashers • 31287/88, 31295/96

***France*** — ***NF***

Standard slots of screw heads • E 27-044
2 standards for machine screws with different heads • E 27-112/13
8 standards for set screws, headless and with different forms of heads • E 27-114/15, -117/18, -120/21, -124, -127
3 standards for wood screws • E 27-141/43
Knuckle-thread joint • E 29-579
Tolerances for bolts • E 27-024

***Germany*** — ***DIN***

Square-head screws, metric • 479
6 standards for different types of carriage bolts • 603/608
Ring gage for metric screw thread • 2285
Pin-rivets • 7341
Screw drivers for recessed head screws • 7963
Metric thread, fine, 6-mm pitch • 244
Metric thread, fine, 0.75-mm pitch • 518
10 standards for set screws, studs, bolts, etc. • 417, 453, 834/36, 931, 938/39, 960, 962
Metric screw thread, fine, 2-, 3-, 4-mm pitch • 245/7
5 standards for metric screw thread, fine, 0.2- to 1-mm pitch • 516/17, 519/21
7 standards for different machine screws, metric • 63, 84/88, 91
Studs, metric thread • 833
Hexagon-head machine screws, metric • 933,961
Gib keys • 6887

***Hungary*** — ***MNOSZ***

14 standards for different washers • 2131, 2200/01, 2204/07, 2209/13, 2233/34
13 standards for different nuts • 2140, 2161, 2164, 2260/61, 2264, 2268/72, 2280/81
7 standards for different bolts • 2171, 2173, 2227/31
6 standards for pins • 2218/22, 2224
11 standards for different screw bolts • 2316, 2325, 2327, 2330, 2336, 2352, 2356, 2360, 2363, 2365, 2367
6 standards for different studs • 2400/05
3 standards for set screws • 2421/23
13 standards for machine screws • 2430/31, 2436/37, 2440/41, 2443, 2451, 2461, 2465/66, 2469/70
4 standards for wood screws • 2496/99
5 standards for different rivets • 4255/57, 4259, 4261
7 standards for special boilers' rivets • 4463/69

***Israel*** — ***SI***

Edison screw thread • 79

***Sweden*** — ***SIS***

Woodruff keys, type WK • SMS-11
Keyways for woodruff keys • SMS-692
T-slot bolts, square head M- and W- threads • SMS-1536/37
Drive screws, type KDS • SMS-1549
Thumb-screws, M- and W- threads • SMS-1550/51
Cap-nuts, type HM, M- and W- threads • SMS-1552/53

***United Kingdom*** — ***BS***

Large aluminum alloy rivets • 1974:1953

### 621.89 LUBRICATION

***Austria*** — ***ÖNORM***

Steam turbine oil • C 2026

***Czechoslovakia*** — ***CSN***

13 standards for different kinds of lubricating oils and greases • 656910/12, 656915/20, 656945/46, 656965/66

### 621.9/92 MACHINE TOOLS. TOOLS

***Czechoslovakia*** — ***CSN***

51 standards for different types and sizes of milling cutters • Series 222100
Lathes. Basic dimensions • 200400

***Germany*** — ***DIN***

5 standards for hand- and machine- bits • 6442, 6444, 6461, 7483, 7487
7 standards for machine taps, metric, different sizes • 371, 374, B1.1-5, 376
2 standards, machine taps, Whitworth, from 1/16 to 3 in. • 2182/83
3 standards, gimlet, countersink, and auger bits • 6445/46, 6463

***Hungary*** — ***MNOSZ***

5 standards for milling cutters • 3803/07
24 standards for different grinding wheels and tools • 4500/05, 4510/22, 4530/34

***India*** — ***I.S.***

Chisels • 402

***Netherlands*** — ***N***

Test sieves. Aperture dimensions • 480
Test sieves. Examination • 574

***Poland*** — ***PN***

5 standards for blacksmiths' tools • B-60006, -60028/29, -60051, -60053
2 standards for woodworking machines • D-56103, -56202
2 standards for blades for Landis screw-cutting lathe • M-58224/25
5 standards for lathes' parts • M-60104/05, -60111/12, -61314
5 standards for saddlers' tools • 0-55510/14

***Spain*** — ***UNE***

Lathes. Basic definitions • 15413

***United Kingdom*** — ***BS***

Bit braces • 1978:1953
Circular dies for thread rolling • 1947:1953
Flat dies for thread rolling • 1946:1953

### 622 MINING

***Czechoslovakia*** — ***CSN***

12 standards for different types of mining winches • 445211/15, 445217/23
8 standards for pneumatic mining transport equipment • 445261/68

***Germany*** — ***DIN***

Bumpers of mining wagons • 20552
Miners' leather aprons • 23307
Seamless pipes for deep well drilling • 4918/19
Tolerances for mining machines and equipment • 24001

### 625.2 RAILWAY ROLLING STOCK

***Germany*** — ***DIN***

Leaf springs • 5542
Tolerances applicable to railway rolling stock • 5601
Pipe couplings and reductors • 1564
Cotter pins • 1584
Table of tolerances and fits for rolling stock construction • 5601

***Italy*** — ***UNI***

Two types of Diesel locomotives for 950-mm track. Principal dimensions • 3346

***Spain*** — ***UNE***

Testing carriage frames • 25036
Wash basin in coaches • 25061
Ventilators • 25063
Brake shoes • 25066

### 628/.2 SANITARY TECHNOLOGY

***Austria*** — ***ÖNORM***

Rules for building street gutters • B2503

***Germany*** — ***DIN***

Catch basins • 591, B.1-4
Sewer pipe socket cover • 538

***Ireland*** — ***Irish Standards***

Cast-iron rain-water goods • 42

***South Africa*** — ***SABS***

Code of practice for testing water boreholes • 045-1952

***Union of Soviet Socialist Republics*** — ***GOST***

Cast-iron traps and siphons • 714

### 667/.5 DYEING AND BLEACHING INDUSTRIES

***India*** — ***I.S.***

Ink for stamp pads • 393
Ink, black, for cloth marking • 394

***Poland*** — ***PN***

3 standards for dyestuff, sampling • C-04702/03, -04707
8 standards for different pencils and crayons • F-94000/01, -94034, -94050, -94055/56, B-54000, N-94031

***Union of Soviet Socialist Republics*** — ***GOST***

Lead pencils. Method of testing writing properties • 6112-52

***United Kingdom*** ***BS***

Fastness to daylight of colored textiles • 1006: Part 1:1953

### 667.6/.8 PAINTS. VARNISHES. LACQUER. POLISHING MATERIALS

***Austria*** ***ÖNORM***

Painting on wood surface • C2350

***Hungary*** ***MNOSZ***

Cinnabar • 2832
Chromium oxide • 2833
Determination of lead and zinc content • 2835, 2836

***India*** ***I.S.***

Paste filler for color coats • 426
Distemper, dry • 427
Distemper oil emulsion • 428

***Ireland*** ***Irish Standards***

Hard-gloss paints and enamel • 32

***Netherlands*** ***N***

Barium white and barytes pigments. Method of test • *V* 1943
Zinc-yellow pigment. Method of test • 1940

***Spain*** ***UNE***

Amyl-acetate and acetone solvents • 48022/23

***Sweden*** ***SIS***

Pigments. Determination of covering power • SIS-16 00 10

***Union of Soviet Socialist Republics*** ***GOST***

Nitro-enamel automobile paint • OST 10927

***United Kingdom*** ***BS***

Prussian blue for paints (types 1 and 2) • 283:1953

***Uruguay*** ***UNIT***

Method of sampling paints and varnishes • 93-53

### 669 METALLURGY

***Australia*** ***SAA***

Specification for copper plates for general purposes (including boilers and locomotive fireboxes) • H60-1952

***Austria*** ***ÖNORM***

Steel for manufacturing hunting guns • M 3170

***Belgium*** ***NBN***

Steel rolled bars for rivets, bolts, nuts, etc. • 293

***Czechoslovakia*** ***CSN***

Barite • 721911
Comparative tables of USSR (GOST) and Czechoslovak (CSN) standards for steels and steel alloys • 420080
Copper concentrate • 441680
Fluorite • 721910
Molybdenum concentrate • 441632
Tungsten concentrate • 441637
4 standards for ferrous and nonferrous ores • 441570, 441580, 441601, 441605
13 standards for ordinary structural steel • Series 411411, Series 411362
2 standards for steel plates for boilers and pressure vessels • 420109, 425312
6 standards for structural alloy steels • 413030, 415020, 415110/11, 415123, 415223

***France*** ***NF***

Chemical analysis of aluminum and aluminum alloys: contents of silicon and iron • A 06-571
Classification and specification of aluminum and aluminum alloys used for casting of kitchen utensils • D 21-440
3 standards for determination of aluminum, copper, and magnesium content in zinc alloys, for pressure molding • A 06-601/03

***Germany*** ***DIN***

Round wires and strips for electric heating elements • 59470
Corrugated steel sheets • 59231
4 standards for different mechanical tests of metals • 50113, 50118, 50120, 50330
Testing of metals for corrosion resistance • 50905

***India*** ***I.S.***

Leaded tin bronze ingots and castings • 318
Lead, method of chemical analysis of • 403
Lead sheets for general purpose • 405

***Italy*** ***UNI***

Methods of sampling of different nonferrous metals for chemical analysis • 3343
Sampling of cast iron and steel for chemical analysis • 3345
Survey of general and mechanical characteristics of semi-finished copper articles • 3310
System of symbols for designation of different steels • 3344
8 recommended standards for different methods of chemical analysis of metals • 3302/09
25 obligatory standards for different methods of chemical analysis of metals • 3311/31, 3333/36

***Poland*** ***PN***

Ferrous alloys. Analysis, sampling • H-04002
Nickel. Classification • H-82180
3 standards for carbon steel • H-84028, -93406, -93420

***Spain*** ***UNE***

Magnetic steel plate. Delivery specifications • 20001
Equal angle sections • 36535
Taper strip section • 36554/55
Unequal angle sections • 36532

***Sweden*** ***SIS***

Metal materials and products. General acceptance and control tests • SIS-11 00 01
3 standards for different composition of gun metal • SIS-14 52 02/04
6 standards for different composition of bronze • SIS-14 54 43/44, -14 54 65, -14 54 75, -14 56 40/41

***Union of Soviet Socialist Republics*** ***GOST***

Constantan alloy strips. Specification • 5189

***United Kingdom*** ***BS***

Brass tubes for general purposes • 885:1953
Copper for electrical purposes: tubes (high conductivity • 1977:1953
Solid-drawn copper and copper-alloy tubes for condensers, evaporators, heaters, and coolers • 378:1953

### 674 WOOD INDUSTRY

***Germany*** ***DIN***

Wood wool ropes • 4075
Wood wool • 4077

***New Zealand*** ***NZSS***

Commercial plywoods • 985, Nov 1952 (superseding E 160)

***Poland*** ***PN***

8 standards for different lumber products • D-03001, -94004, -94013, -95007, -95009/10, -97000, -97002

***United Kingdom*** ***BS***

Connectors for timber • 1579:1953

### 679.5 PLASTICS INDUSTRY IN GENERAL

***Hungary*** ***MNOSZ***

7 standards for different tests of plastics • 1421/27

***Poland*** ***PN***

Plasticine • N-94030

***Sweden*** ***SIS***

General acceptance and control tests of molding and spray compounds • SIS-20 00 01
Test rods of thermosetting molding compounds • SIS-20 01 01
Test sheets of thermosetting molding compounds • SIS-20 01 02
Tests for flexural strength • SIS-20 03 04
Tests for impact resistance • SIS-20 03 05
Test for heat distortion • SIS-20 03 06
Determination of density • SIS-20 03 07
Weight density and bulk factor • SIS-20 03 08
Tests for track resistance • SIS-20 03 09
Tests for acetone-soluble substances in phenolic resin compounds • SIS-20 03 10
Determination of modulus of elasticity • SIS-20 03 11
Screen analysis • SIS-20 03 12
Phenolic molding compound, wood flour-filled • SIS-20 12 01
Phenolic molding compound, stone flour-filled • SIS-20 12 50
Phenolic molding compound, asbestos-filled • SIS-20 12 51

### 679.8 STONE INDUSTRY

***Poland*** ***PN***

Names of different types of stone dressing • B-01105
12 standards for different stone-dressing tools • B-54009/20
Stone-working tools • B-54006, -54017

### 681 FINE MECHANISMS. CLOCKS AND WATCHES

***Canada*** ***CSA***

Radio noise measuring instruments and general methods of measurement • C22.4 No. 101-1953

***Germany*** ***DIN***

Pyrometers • 16160, B1.6
2 types of pressure gages • 16041, 16053
Magnifying glasses • 58383
Weigh-bridges, street scales • 1926
Typewriter plates • 2101
Typewriter keyboard • 2112
Pressure and vacuum-pressure gages • 16043/44

***Hungary*** ***MNOSZ***

Spool for 13-mm typewriter ribbon • 473

***Poland*** ***PN***

7 standards for different parts of eyeglass frames • Z-84205/10, -84215
11 standards for eyeglass frames and parts • Z-84201/04, -84207, -84211/14, -84216, -84219
11 standards for different parts for clockwork and fine mechanisms • M-54645, -54660, -54665, -54671, -54690, -54701/06
3 standards for spectacles • Z-84200, -84217/18

***United Kingdom*** ***BS***

Adding machines • 1909:1952

### 681.8 TECHNICAL ACOUSTICS

***Germany*** ***DIN***

Magnetic membrane • 45515

***United Kingdom*** ***BS***

Lateral-cut gramophone records and direct recordings • 1928:1953

# Announcing New Books . . . .

• **50-Year Index to ASTM Technical Papers and Reports** (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., 216 pp, cloth binding, $6.00)

This 50-Year Index provides a detailed author and subject index to all the ASTM technical papers and reports dealing with materials, particularly their properties and testing, appearing in ASTM publications covering the period from 1898 through 1950. From 1898 to 1902 the Society was known as the American Section of the International Association for Testing Materials. In 1902 the Society obtained its charter and was reorganized as the American Society for Testing Materials.

• **Machinery's Handbook.** By Erik Oberg and F. D. Jones. (The Industrial Press, 148 Lafayette Street, New York 13, N. Y. Fourteenth Edition. $8.00.)

With the sale of the millionth copy in June, this handbook has broken a record for technical manuals. The current edition is the fourteenth since the book was first published in 1914. In that time it has become accepted as one of the most authoritative sources of information needed by practical men for use in the machine shop and drafting room. Throughout the book much of the information included is based on or directly quoted from standards of national associations and societies and from American Standards.

• **Engineering Drawing.** By Thomas E. French and Charles J. Vierck. (Eighth edition. McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 36, N. Y., 1953. $6.00)

This is the eighth edition of this well-known manual. The new edition has been rearranged and revised to include current standards and practices. Almost every chapter has been altered or rewritten, and figures have been changed or redrawn. The chapter on Screw Threads follows the new Unified Standard, and the chapter on Welding Drawings has been revised to conform with the latest American Standard.

• **Engineering Drawing.** By Josef V. Lombardo; Albert J. Lombardo; Lewis O. Johnson; W. Irwin Short. (Barnes & Noble, Inc, 105 Fifth Avenue, New York 3, N. Y., 1953. $2.00)

This textbook in the College Outline Series provides basic principles and rules for engineering drawing and offers a section of problems for the guidance of students. The American Standard on Drawings and Drafting Room Practice, Z14.1-1946, is included. Tables of thread dimensions, screws, bolts, and similar dimensions needed by the draftsman are reprinted from American Standards. This outline is geared for use with standard textbooks, such as *Engineering Drawing* by Thomas E. French.

• **FBI Register of British Manufacturers 1952-53. Twenty-fifth Edition.** (Published November 1952 for the Federation of British Industries, by Kelly's Directories Limited and Iliffe and Sons Limited, Dorset House, Stamford Street, London, S.E.I. Price: 42 shillings. 922 pages. Bound full cloth.)

This is a directory of the Federation of British Industries, the largest and most influential association of British manufacturers. It includes a classified guide listing more than 6,000 FBI member firms under more than 5,000 alphabetical trade headings. The register is used throughout the world by importers, buyers, trade commissioners, and others interested in international trade.

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**One of a Series**

**Today's Electric Lamps Are Interchangeable**

Today few articles of commerce represent so high a degree of standardization as electric lamps and their accessories. There is now complete mechanical interchangeability from coast to coast. Some 40 dimensional standards for incandescent lamps and about 30 standards for fluorescent lamps have been approved.

This standardization was worked out by the cooperative effort of the electrical manufacturers, the power companies, the fire insurance companies, and others. It is a small part of a total standardization program that probably affects and benefits more people than any other. Two national electrical standards codes encompass virtually all phases of electrical transmission and use.

The National Electrical Code gives detailed requirements for the installation of electric wiring and equipment for lighting, heating, and power in public and private premises. It was formulated under the sponsorship of the National Fire Protection Association and was adopted as a standard by the National Board of Fire Underwriters. First published in 1897, it has been reviewed and revised many times. It became an American Standard in 1919. Hundreds of municipalities use the code in some form of legal enactment. Insurance companies use it as advice to their assured.

The National Electrical Safety Code provides the rules and regulations which insure the installation, maintenance, and safe operation of electric lines and equipment, including radio installations. It was formulated under the sponsorship of the National Bureau of Standards in 1913 and was approved as an American Standard in 1932. It has been adopted in whole or as a guide to practice in almost all of those states that have rules on electrical installations.

This standardization program has created a national market and has thus permitted mass production, distribution, and use of electric lamps and appliances. The result has been better convenience, greater safety, and cheaper prices. An electric lamp cost $1.75 in 1907; it costs less than 15 cents today—and lasts a lot longer.

# AMERICAN STANDARDS

## Status as of August 13, 1953

### Legend

*Standards Council* — Approval of Standards Council is final approval as American Standard; usually requires 4 weeks.

*Board of Review* — Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.

*Standards Boards* — Approve standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

### Acoustics

*American Standard Published —*

Speech Audiometers, Specification for, Z24.13-1953 $0.50

Contains requirements for an apparatus for delivering speech tests to a listener. The apparatus is used as a speech audiometer for diagnostic purposes and is intended for testing one individual at a time.

*Sponsor:* Acoustical Society of America

### Arbitration

*In Board of Review —*

Commercial Arbitration, Standards for

*Sponsor:* American Arbitration Association

### Building

*American Standards Published —*

Oxychloride Composition Floors and Their Installation, Specifications for, A88.1-1951; A88.2-1952; A88.3-1952; A88.4-1952 (Revision of A88.2-1951; A88.3-1951; A88.4-1951) $0.85

*Sponsors:* National Bureau of Standards; American Society for Testing Materials

*In Construction Standards Board —*

Building Code Requirements and Good Practice Recommendations for Masonry, A41 (Revision of A41.1-1944)

Building Code Requirements for Minimum Design Loads in Buildings and Other Structures, A58.1

*Sponsor:* National Bureau of Standards

National Plumbing Code, A40.8 (Revision of A40.7-1949)

*Sponsors:* The American Public Health Association; The American Society of Mechanical Engineers

*Reaffirmation Approved —*

Manhole Frames and Covers for Subsurface Structures, A35.1-1941 (Reaffirmed 1947, 1953)

*Sponsor:* Construction Standards Board

### Chemical Industry

*American Standard Approved —*

Toluene Insoluble Matter in Rosin, Method of Test for, ASTM D269-52; ASA K21.1-1953 (Revision of ASTM D269-30; ASA K21.1-1936)

*Sponsor:* American Society for Testing Materials

### Drawings and Symbols

*In Board of Review —*

Letter Symbols for Radio, Y10.9

*Sponsor:* The American Society of Mechanical Engineers

*Reaffirmation Approved —*

Graphical Symbols for Heating, Ventilating, and Air Conditioning, Z32.2.4-1949 (Reaffirmed 1953)

Graphical Symbols for Welding, Z32.2.1-1949 (Reaffirmed 1953)

*Sponsors:* The American Society of Mechanical Engineers; American Institute of Electrical Engineers

Letter Symbols for Mechanics of Solid Bodies, Z10.3-1948 (Reaffirmed 1953)

*Sponsor:* The American Society of Mechanical Engineers

### Electrical

*American Standards Published —*

Bronze Trolley Wire, Specifications for, ASTM B9-52; ASA C7. 5-1953 (Revision of ASTM B9-49; ASA H4.5-1947) $0.25

Concentric-Lay-Stranded Aluminum Conductors, Steel-Reinforced (ACSR), Specifications for, ASTM B232-52T; ASA C7.22-1953 (Revision of ASTM B232-50T; ASA C7.22-1951) $0.25

Concentric-Lay-Stranded Copper and Copper Covered Steel Composite Conductors, Specifications for, ASTM B229-52; ASA C7.19-1953 (Revision of ASTM B229-49; ASA C7.19-1951) $0.25

Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft, Specifications for, ASTM B8-52; ASA C7.8-1953 (Revision of ASTM B8-50; ASA C7.8-1951) $0.25

Concentric-Lay-Stranded Copper Covered Steel Conductors, Specifications for, ASTM B228-52; ASA C7.18-1953 (Revision of ASTM B228-49; ASA C7.18-1951) $0.25

Copper Bus Bar, Rod, and Shapes, Specification for, ASTM B187-52; ASA C7.25-1953 $0.25

Cored, Annular, Concentric-Lay-Stranded Copper Conductors, Specifications for, ASTM B226-52; ASA C7.16-1953 (Revision of ASTM B226-50; ASA C7.16-1951) $0.25

Figure-9 Deep-Section Grooved and Figure-8 Copper Trolley Wire for Industrial Haulage, Specifications for, ASTM B116-52; ASA C7.11-1953 (Revision of ASTM B116-49; ASA C7.11-1951) $0.25

Hard-Drawn Copper Alloy Wires for Electrical Conductors, Specifications for, ASTM B105-52; ASA C7.10-1953 (Revision of ASTM B105-49; ASA C7.10-1951) $0.25

Hard-Drawn Copper Covered Steel Wire, Specifications for, ASTM B227-52; ASA C7.17-1953 (Revision of ASTM B227-49; ASA C7.17-1951) $0.25

Hard-Drawn Copper Wire, Specifications for, ASTM B1-52T; ASA C7.2-1953 (Revision of ASTM B1-51T; ASA H4.2-1941) $0.25

Hot-Rolled Copper Rods for Electrical Purposes, Specifications for, ASTM B49-52; ASA C7.7-1953 (Revision of ASTM B49-50; ASA H4.7-1942) $0.25

Lead-Coated and Lead-Alloy-Coated Soft Copper Wire for Electrical Purposes, Specifications for, ASTM B189-52T; ASA C7.15-1953 (Revision of ASTM B189-50; ASA C7.15-1951) $0.25

Medium-Hard-Drawn Copper Wire, Specifications for, ASTM B2-52; ASA C7.3-1953 (Revision of ASTM B2-49; ASA H4.3-1941) $0.25

Seamless Copper Bus Pipe and Tube, Specification for, ASTM B188-52; ASA C7.26-1953 $0.25

Soft or Annealed Copper Wire, Specifications for, ASTM B3-52T; ASA C7.1-1953 (Revision of ASA H4.1-1947) $0.25

*Sponsor:* American Society for Testing Materials

*American Standards Approved —*

Grounding-Type Attachment Plug Caps and Receptacles, C73a-1953 (Partial revision of and supplement to C73-1941, reaffirmed 1946; and revision of C73a-1950 and C73b-1951)

*Sponsor:* National Electrical Manufacturers Association

National Electrical Code, C1-1953 (Revision of C1-1951)

*Sponsor:* National Fire Protection Association

*In Board of Review —*

Flexible Cord and Fixture Wire, C33.1

*Sponsor:* Underwriters' Laboratories

Incandescent Lamps for 115-, 120-, and 125-Volt Circuits, C78.100 (Revision of C78.100-1949)

Incandescent Lamps: Infrared Lamps for 115-125 Volt Service, C78.106 (Revision of C78.106-1949)

Incandescent Lamps: Miniature Incandescent Lamps, C78.140 (Revision of C78.140-1949)

Projector and Reflector Spot and Flood Incandescent Lamps for 115, 120, and 125 Volts, C78.107 (Revision of C78.107-1949)

R-30 Bulb, Medium Screw Base Incandescent Lamps, C78.251

*Sponsor:* Electrical Standards Board

Rigid Steel Conduit, Enameled, Specification for, C80.2 (Revision of C80.2-1950)

Rigid Steel Conduit, Zinc Coated, Specification for, C80.1 (Revision of C80.1-1950)

*Sponsors:* American Iron and Steel Institute; National Electrical Manufacturers Association

Rubber-Insulated Tree Wire, Specifications for, C8.16 (Revision of C8.16-1940)

*Sponsor:* Electrical Standards Board

*In Consumer and Electrical Standards Boards—*

Household Automatic Electric Flatirons, C70.1

*Sponsor:* National Electrical Manufacturers Association

*In Electrical Standards Board —*

Measurement of Test Voltage in Dielectric Tests, (AIEE No. 4), C68.1 (Revision of C68.1-1942)

*Sponsor:* American Institute of Electrical Engineers

*Reaffirmation Approved —*

Electrical Metallic Tubing, Zinc Coated, Specification for, C80.3-1950 (Reaffirmed 1953)

*Sponsors:* American Iron and Steel Institute; National Electrical Manufacturers Association

*Withdrawal Being Considered —*

Incandescent Lamps: G-30 Bulb, Medium Skirted Screw Base, C78. 249-1949

Loading and Operation of Instrument Transformers, Guide for, C57.33-1953

Loading Current-Limiting Reactors, Guide for, C57.36-1948

Loading Oil-Immersed Distribution and Power Transformers, Guide for, C57.32-1948

Loading Pole-Type Constant-Current Transformers, Guide for, C57.34-1948

Loading Step-Voltage and Induction-Voltage Regulators, Guide for, C57.35-1948

Operation of Transformers, Regulators, and Reactors at Altitudes Greater than 3300 Feet (1000 Meters), Guide for, C57.31-1948

*Sponsor:* Electrical Standards Board

### Gas-Burning Appliances

*In Miscellaneous Standards Board —*

Addenda to Approval Requirements for Domestic Gas Ranges (Z21.1-1952), Z21.1a

Addenda to Approval Requirements for Domestic Gas-Fired Incinerators (Z21.6-1949), Z21.6a

Addenda to Approval Requirements for Gas-Fired Room Heaters (Z21.11-1949), Z21.11b

Addenda to Approval Requirements for Gas Unit Heaters (Z21.16-1951), Z21.16a

Approval Requirements for Central Heating Gas Appliances, Volume IV, Gravity and Fan Type Vented Recessed Heaters, Z21.13.4 (Revision of Z21.13.4-1951)

Approval Requirements for Domestic Gas Clothes Dryers, Z21.5 (Revision of Z21.5-1940)

Approval Requirements for Gas Water Heaters, Z21.10 (Revision of Z21.10-1950, Z21.10a-1951, and Z21.10b-1952)

*Sponsor:* American Gas Association, Inc

### Mechanical

*Standard Submitted —*

Knurling, B5

*Sponsor:* The American Society of Mechanical Engineers

*Reaffirmation Approved —*

Indicating Pressure and Vacuum Gages, Round Dial-Type with Elastic Pressure Chamber, B40.1-1939 (Reaffirmed 1947; 1953)

*Sponsor:* The American Society of Mechanical Engineers

### Motion Pictures

*American Standards Published —*

Dimensions for 100-Mil Magnetic Coating on Single-Perforated 16mm Motion-Picture Film, PH22.87-1953 $0.25

Dimensions for 200-Mil Magnetic Sound Track on 35mm and 17½mm Motion-Picture Film, PH22.86-1953 $0.25

Method of Determining Resolving Power of 16mm Motion-Picture Projector Lenses, PH22.53-1953 (Revision of Z22.53-1946) $0.25

Screen Brightness for 35mm Motion Pictures, PH22.39-1953 (Revision of Z22.39-1944) $0.25

(*Continued on page* 284)

# This Month's Standards Personality...

**Theodore Irving Coe,** long-time leader in standardization, has recently received the signal honor of being elected a Fellow of The American Institute of Architects.

Mr Coe's first major architectural job brought him to New York to supervise the construction of the Hotel St Regis. Later he guided the erection of the Engineering Societies' Building.

In Washington, Mr Coe has made his most noted contributions to both standardization and architecture. In 1932 he represented the architects in the construction of the U. S. Supreme Court Building. Subsequently, he assumed the dual posts of Executive Secretary of the U. S. Construction League and Technical Secretary of The AIA. Since the middle '30's he has devoted himself entirely to the latter work.

Civic administration has long benefited from Mr Coe's comprehensive knowledge of what might be termed preventive architecture. Under Mayor John P. Mitchell, Mr Coe was Chief Inspector of the Bureau of Fire Prevention of the City of New York. Utilizing his working knowledge of the New York Building Congress, Mr Coe helped in 1937 to form a similar congress in Washington and was its first president. He is at present chairman of the Board of Zoning Adjustment of the city of Washington.

To say that for more than 20 years Mr Coe has served the American Standards Association energetically would be a pale understatement. He now sits on nearly a score of sectional committees. Since 1945 he has actively shaped the policies underlying American Standards through his position on what is now the Construction Standards Board, of which he has been both chairman and vice-chairman. In addition to his chairmanship of Sectional Committee A42 on Specifications for Plastering, he also heads A97, Development of Methods Covering the Application of Gypsum Wallboard.

Ranging from A to Y (A58, Building Code Requirements for Minimum Design Loads in Buildings, to Y1, Abbreviations), the list of ASA committees on which Mr Coe has worked indicates how various is his knowledge and how enthusiastic his support of standards. As a result of Mr Coe's affiliations with both ASA and The AIA, he has extended his work on Sectional Committee A62, Coordination of Dimensions of Building Materials and Equipment, to the end that The AIA and The Producers' Council, two of the sponsors of Project A62, have established a joint office, headed by an executive secretary, to implement the work of this committee. Committee A2, Methods of Fire Tests of Building Construction and Materials, is only one of the more than 70 technical committees of ASA, the American Society for Testing Materials, The National Fire Protection Association, and similar organizations which count him an active member.

Within The AIA Mr Coe edits The AIA Standard Filing System and Alphabetical Index. Local Chapter Representatives call upon him for liaison with the Department of Education and Research.

A member of The Institute since 1922, he is a life member of the Connecticut Society of Civil Engineers, a member of the Washington Society of Engineers, the Society of American Military Engineers, The Engineers' Club in New York City, and The Cosmos Club in Washington.

(*Continued from page* 283)

*Sponsor:* Society of Motion Picture and Television Engineers

***In Photographic Standards Board —***

Sixteen-Millimeter Motion Picture Projection Reels, PH22.11 (Revision of PH22.11-1952)
*Sponsor:* Society of Motion Picture and Television Engineers

### Nonferrous Metals and Metallurgy

***American Standards Published —***

Copper-Silicon Alloy Wire for General Purposes, Specification for, ASTM B99-51; ASA H30.1-1953 (Revision of ASTM B99-49; ASA H30.1-1949) $0.25

Seamless Copper Water Tube, Specification for, ASTM B88-51; ASA H23.1-1953 (Revision of ASTM B88-50; ASA H23.1-1951) $0.25
*Sponsor:* American Society for Testing Materials

### Paints and Varnishes

***American Standards Approved —***

Mass Color and Tinting Strength of Color Pigments, Method of Test for, ASTM D387-52T; ASA K57-1953 (Revision of ASTM D387-36; ASA K57-1941)

Specific Gravity of Pigments, Methods of Test for, ASTM D153-52T; ASA K41-1953 (Revision of ASTM D153-39; ASA K41-1939)
*Sponsor:* American Society for Testing Materials

### Petroleum Products and Lubricants

***American Standard Published —***

Distillation of Plant Spray Oils, Method of Test for, ASTM D447-52T; ASA Z11.43-1952 (Revision of ASTM D447-51T; ASA Z11.43-1951) $0.25
*Sponsor:* American Society for Testing Materials

### Photography

***In Board of Review —***

Method for Determining Exposure Guide Numbers for Photographic Lamps, PH2.4

Method for Determining the Relative Photographic Efficiency of Illuminants, PH2.3
*Sponsor:* Photographic Standards Board

### Pipe and Fittings

***In Mechanical Standards Board —***

Cast-Iron Screwed Drainage Fittings, B16.12 (Revision of B16.12-1942)
*Sponsors:* Manufacturers Standardization Society of the Valve and Fittings Industry; Heating, Piping, and Air Conditioning Contractors National Association; The American Society of Mechanical Engineers

***Reaffirmation Being Considered by the Mechanical Standards Board —***

Brass or Bronze Screwed Fittings, 250 lb, B16.17-1949

Cast-Iron Pipe Flanges and Flanged Fittings, Class 125, B16.1-1948

Cast-Iron Pipe Flanges and Flanged Fittings, Class 250, B16b-1944

Cast-Iron Screwed Fittings, 125 and 250 lb, B16.4-1949

Ferrous Plugs, Bushings and Locknuts with Pipe Threads, B16.14-1949
*Sponsor:* The American Society of Mechanical Engineers

### Rubber

***American Standards Approved —***

Method of Tension Testing of Vulcanized Rubber, ASTM D412-51T; ASA J2.1-1953 (Revision of ASTM D412-41; ASA J2.1-1942)

Method of Test for Accelerated Aging of Vulcanized Rubber by the Oven Method, ASTM D573-52; ASA J5.1-1953 (Revision of ASTM D573-48; ASA J5.1-1949)

Method of Test for Accelerated Aging of Vulcanized Rubber by the Oxygen-Pressure Method, ASTM D572-52; ASA J4.1-1953 (Revision of ASTM D572-48; ASA J4.1-1949)

Methods of Sample Preparation for Physical Testing of Rubber Products, ASTM D15-52T; ASA J1.1-1953 (Revision of ASTM D15-41; ASA J1.1-1942)
*Sponsor:* American Society for Testing Materials

### Safety

***American Standard Published —***

Safety Code for Private Residence Elevators, A17.1.5-1953 (Part V of American Standard Safety Code for Elevators, A17.1) $1.00
*Sponsors:* The American Institute of Architects; National Bureau of Standards; The American Society of Mechanical Engineers

***In Safety Standards Board —***

Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, Z53.1 (Revision of American War Standard, Z53.1-1945)
*Sponsor:* National Safety Council

### Wood Industry

***Withdrawal Being Considered —***

Cross Ties and Switch Ties, Specifications for, O3-1926
*Sponsors:* American Railway Engineering Association; Forest Products Laboratory

Project O3 on Specifications for Cross Ties and Switch Ties
*Sponsors:* Association of American Railroads; U. S. Department of Agriculture (Forest Service)

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# What's New on American Standard Projects

National Electrical Code, C1 —

*Sponsor:* National Fire Protection Association (Electrical Section)

**Interpretation 390, issued May 15, 1953, refers to Section 3105:— Conductors in Multiple.**

*Question:* Section 3105 of the National Electrical Code permits the paralleling of conductors. If five 3/0 conductors are paralleled on a three-phase, three-wire circuit,

(1) Are these figured as 15 or 3 conductors in so far as the Code is concerned?

*Answer:* They are figured as 15 conductors.

(2) What percentage of reduction in current-carrying capacity must be applied to the paralleled conductors in accordance with Note 4 of Tables 1 and 2 of the 1951 edition of the Code?

*Answer:* At least two runs of conduit must be used for the 15 conductors. If 9 conductors were run in one conduit and 6 in the other, the current-carrying capacity for the 9 conductors group would be 70 percent of normal rating and for the six conductor group 80 percent of normal rating.

**Interpretation 391, issued May 12, 1953, refers to Section 2003:— Use of Autotransformer on Emergency Systems.**

*Statement:* An emergency power source, consisting of a two-wire, 240-volt generator, supplies emergency power in the event of failure of the 120/240 volt main power supply. The neutral conductor in the main power supply is properly grounded at the supply transformer and at the service. When the main power supply is disconnected and the emergency supply takes over, the neutral is fed through solid to the mid-point of an autotransformer, the outer terminals of which are supplied by the two-wire, 240-volt generator.

*Question No. 1:* Does Section 2003 of the Code permit this use of an autotransformer to derive a 120/240 volt, three-wire circuit from the two-wire, 240-volt generator?

*Answer:* No.

*Question No. 2:* Is the grounded neutral wire from the outside commercial supply transformer to the normal service switch and on to the emergency supply service switch and autotransformer mid-point permitted to be bare?

*Answer:* Yes.

*Question No. 3:* Where the three-

wire supply from the transformer on the load side of the emergency circuit service switch is run to a separate building, under the same management and to a control switch in that building, may the grounded neutral conductor in underground single conductor cables connecting the emergency service switches in the buildings be bare?

*Answer:* Yes.

**Interpretation 392, issued June 11, 1953, refers to Article 250:— Isolated Systems (Ungrounded).**

*Statement:* In a hazardous location it is proposed that a 120-volt, alternating-current system be isolated instead of grounded. The isolation will be achieved by the use of two transformers and an intermediate circuit. The first transformer steps the voltage down from 2400 volts to 120 volts. It is pole mounted. The second transformer is an isolating transformer on the premises. It is proposed that the intermediate circuit be grounded, the interior circuit be insulated from ground, and that both transformers be provided with lightning arresters. The intermediate circuit is wired with cable having a grounded sheath. The interior circuit is in conduit and all equipment in the building is suitably enclosed for the class of hazard inolved. The interior circuit has a ground indicator and there is competent supervision over it at all times.

*Question:* This system does not comply with Section 2514 in that the interior circuit is not grounded, but is it judged to provide a suitable alternative to grounding as given in Section 2501?

*Answer:* Yes, provided the degree of the supervision of the installation by the user is judged satisfactory by the authorities having jurisdiction.

**Interpretation No. 393, issued June 11, 1953, refers to Section 2351:— Service Disconnect Means.**

*Question:* Do two fused pull-out switches, connected in multiple, mounted in a single cabinet, complying with the constructional requirements for service equipment, and providing two disconnecting means for the service, meet the provisions of Sections 2351 and 2371 of the 1951 Code without an additional single main disconnecting means?

*Answer:* Yes.


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**Acoustics, Vibration, and Shock, Z24 —**

*Sponsor:* Acoustical Society of America

At its meeting May 6, the committee set up a number of new Writing Groups and authorized development of new standards and revision of a number of existing standards.

One of these new groups is to start work on a revision of the American Standard Acoustical Terminology, Z24.1-1951.

The Writing Group on Measurement of Transmission Through Building Structures is studying international proposals being developed by ISO and ASTM standards for laboratory measurements of sound transmission. Copies of the ISO code have been sent to members of the committee for analysis and comparison with the ASTM code. The committee may suggest minor modifications to the ASTM code to recognize a measuring technique used in the Riverbank Laboratories. This calls for an absorbent wall opposite the test wall, thus making the receiving room act as a duct without reflection. The committee believes that with minor changes the ASTM code might be approved as American Standard.

A number of writing groups are working in the comparatively new field of shock and vibration. One group is assigned the task of preparing specifications for instruments for measurement of shock and vibration. Another reports that a draft specification for a light-weight high-intensity shock testing machine should be available soon. Two writing groups to prepare specifications for a shock-testing machine for electronic components, and for a medium impact shock-testing machine are being organized. A fifth writing group to work on a shock-testing machine for indicating instruments has had some difficulty in getting started but hopes to report progress soon.

A writing group on sound level meters, organized early this year, has 13 members with representatives of both manufacturers and users. As the result of a questionnaire sent out

by the group it recommended a major revision of the American Standard on Sound Level Meters, Z24.3-1944. The group also recommended preparation of a standard on calibration of sound level meters. It was recommended that this revision should cover three types of meters: Type I, a small inexpensive portable sound survey type of meter; Type II, a meter with somewhat the same convenient physical properties as the present sound level meters but, possibly, with closer tolerance; Type III, an expensive sound level meter with the best possible tolerances, the best stability, and the minimum response to undesired internal and external effects. Committee Z24 approved the recommendations of the Writing Group and changed the Group's title to Sound Level Meters and Their Calibration.

Eleven members of a writing group are working on underwater acoustical terminology. The group has studied two lists of definitions prepared by the Bureau of Ships Subpanel on Underwater Noise Standards, Measurements, and Instrumentation. One of these is used by Bu-Ships as a supplement to American Standard Z24.1-1951.

No decision was made by Committee Z24 as to whether one microbar at one meter, or 0.0002 microbar at one yard should be specified as the basis for work on calibration of underwater transducers. The committee recommended that the point be left open but that all material should clearly state which one was used.

Work on ultrasonic diathermy apparatus will include terminology, calibration procedures, preferred or recommended ranges and output characteristics, and specifications for the minimum technical information to be supplied by manufacturers to users. The writing group considers the proposed standard quite urgent since there are already more than 700 units in use in California alone.

An Institute of Radio Engineers' Committee on loudspeaker testing has been recognized by Committee Z24 as a Writing Group. The proposed standard on which the committee is now working will be sent to members of Committee Z24 for comment.

**"Wouldn't you say it was about time we had a few of the older machines replaced, J. B.?"**

(Reproduced by permission of *American Machinist*)

A technical counsel has been appointed by the Writing Group on Bio- and Psycho-Acoustic Criteria.

He is gathering data on hearing loss in industry and its relation to exposure to noise. Dr Wayne Rudmose, Professor of Physics at Southern Methodist University, was chosen for this position. He has obtained a leave of absence from the University for the spring semester and the summer of 1953. He is evaluating the data he collects and making the necessary statistical analyses before submitting the material to the committee. Dr Rudmose also has access to carefully controlled studies now being made at a factory in Maine.

A workshop on noise and its relation to hearing loss was conducted at the meetings of the Acoustical Society of America in May. A similar workshop is scheduled during the Fourth National Standardization Conference in October.

A new writing group is to undertake revision of the American Standard Specification for Laboratory Standard Pressure Microphones, Z24.8-1949.

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• • **From Cuba comes word that Oswaldo Camejo** has been named chief of the Bureau of Standards of the Department of Commerce of the Cuban Government.

• • **The Council of Engineering Society Secretaries** held its Twenty-First Annual Meeting June 5-6 in Atlantic City, N. J. New officers elected at that time include: *President*, Ernest Hartford, Executive Assistant Secretary, American Society of Mechanical Engineers; *Vice-President*, Edward H. Robie, Secretary, American Institute of Mining and Metallurgical Engineers; *Secretary*, M. C. Turpin, Secretary, American Society of Refrigerating Engineers; *Treasurer*, Charles F. Doerr, Secretary and Executive Officer, Engineers Club of Philadelphia. Directors are: O. Laurence Angevine, Executive Secretary, Rochester Engineering Society; T. J. S. Ess, Managing Director, American Institute of Iron & Steel Engineers; J. Earl Harrington, Secretary, Western Society of Engineers; H. H. Henline, Secretary, American Institute of Electrical Engineers.

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## ISO/TC 11—Boilers

(*Continued from page* 274)

the Secretariat for ISO/TC 11, they will charge these subcommittes to resolve their differences by correspondence or local meetings. The committee hopes that another meeting can be held in about two years to finalize the discussions, so that an ISO Recommendation can be circulated for approval.

"On the subject of allowable stresses, it was quite obvious that the European boilermakers, with the exception of the French and British, use higher stresses than we do, resulting in thinner drums and tubes," the American delegates declared. "They base their allowable stresses on a factor of safety of 1.5 on the yield strength at temperature of operation, whereas for carbon steels, stresses in the USA are based on a factor of safety of 4 on the ultimate strength at room temperature. The subcommittees will get together, compare boiler materials from various countries, and arrive at a suitable stress table. It is hoped that some agreement will be reached which will enable all countries to build boilers for the export trade to the same ISO Recommendation."

## Gaillard Seminar

Twenty-one organizations were represented at Dr John Gaillard's private seminar on Industrial Standardization, held in New York City, June 22 through 26. They are:

The Louis Allis Co
Armour Research Foundation
Blaw-Knox Co
Burroughs Adding Machine Co
Canadian Westinghouse Co, Ltd
Caterpillar Tractor Co
The Clark Controller Co
De Laval Steam Turbine Co
The Falk Corp
The Hartford Special Machinery Co
Harris-Seybold Co
Indian Standards Institution
International Business Machines Corp
Joy Manufacturing Co
Mellon Institute
Motorola, Inc
National Bureau of Standards
The Parker Appliance Co
Pitney-Bowes, Inc
Wheeling Steel Corp
Whitin Machine Works

Fifteen of these organizations were represented for the first time at a Gaillard Seminar, the other six having sent representatives to one or more previous sessions.

The next five-day session of the Gaillard Seminar will be held in the Engineering Societies Building, New York City, January 25 through 29, 1954. Major subjects will be the organization of company standardization work and the technique of writing standard specifications. Advance registrations may be made by phoning Dr Gaillard at ASA headquarters in New York (MUrray Hill 3-3058) or writing him at his home address, 400 West 118 Street, New York 27, N. Y.

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• • **The British Standards Institution** reports that 136 firms have been licensed to apply the BSI standard mark to domestic furniture.

Now in its first month of operation, the standard covers case goods and dining chairs. Performance tests for tables are nearing completion; upholstery standards are still in progress.

With the addition of 40 firms whose applications are under consideration, the licensed manufacturers will represent 75 percent of the total output of bedroom furniture; 50 percent of sideboards, kitchen cabinets, and dining chairs; and 40 percent of occasional furniture.

Performance tests worked out by the government-sponsored Furniture Development Council were used by BSI in establishing the standards.

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### Industrial Purchasing

(*Continued from page* 268)

project, a committee consisting of the best available experts is organized, and the development of the standard starts.

There are some important and significant aspects to the Standards Council approval—ASA approval. Remember that Standards Council consists of a representative of each of the ASA Member-Bodies. Its approval of a specific project, therefore, is an approval by the combined Member-Bodies of ASA, representing a substantial cross section of American industry.

When the standardizing task is assigned to an existing or newly established committee, ASA does not do the assigning nor does it appoint a committee. Likewise, the standard when completed is not considered as a work of ASA but as an accomplishment of NAPA or of one or more other ASA Member-Bodies who sparkplugged the work in the role of sponsor. The established procedures and mechanics of the ASA organization are used to implement the work of standardization and to facilitate arrival at a consensus of all those having a substantial interest regardless of how broadly the subject extends across industrial boundary lines.

It is my hope that in these brief comments I have provided some insight to the function of industrial standardization of which purchasing agents are fundamentally so important a part. In every purchase you make, in every activity in which you engage as part of your industrial function, if it does not lend itself to smooth, straightforward fulfillment; if it occurs to you that there should be an easier way, or that someone, or hundreds of others, must have worked out an identical or similar problem before, the chances are that you are face to face with a subject for standardization; one that your NAPA standardizing committee wants to hear about.

ADVANCE PROGRAM FOR THE

# FOURTH NATIONAL STANDARDIZATION CONFERENCE

## THE WALDORF-ASTORIA, NEW YORK

### MONDAY, OCTOBER 19

**10:00 a.m. Le Perroquet Suite**

**THIRTY-FIFTH ANNUAL MEETING—FOUNDERS DAY**

R. E. Gay, President, The Bristol Brass Corporation, Bristol, Conn, and President, ASA, *Presiding*

The Founders Day program, opening the Fourth National Standardization Conference, will honor the five Founding Societies of the American Standards Association — The American Society of Mechanical Engineers; the American Institute of Mining and Metallurgical Engineers; the American Institute of Electrical Engineers; the American Society for Testing Materials; and the American Society of Civil Engineers

*What Has Been Happening in Your ASA* (Managing Director's Report) — Vice Admiral G. F. Hussey, Jr, Managing Director, ASA

*The International Electrotechnical Commission — Yugoslavia this Year; Philadelphia in 1954* — R. C. Sogge, (General Electric Company), President, United States National Committee

**2:00 p.m. Le Perroquet Suite**

**THE PURCHASING AGENT LOOKS AT STANDARDS**

Session sponsored by the Standardization Committee of the National Association of Purchasing Agents

Vincent de P Goubeau, Vice-President in Charge of Materials, RCA Victor Division, Radio Corporation of America, Camden, N. J., *Presiding*

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### TUESDAY, OCTOBER 20

**10:00 a.m. Astor Gallery**

**COMPANY MEMBER CONFERENCE**

K. B. Clarke, Assistant Superintendent of Manufacturing Engineering, Western Electric Company, N. Y., *Chairman*

**FACTORS INVOLVED IN ORGANIZING A STANDARDS DEPARTMENT IN AN INDIVIDUAL COMPANY**

H. W. Robb, General Electric Company
W. B. Fleming, Jeffrey Manufacturing Company
J. M. Goldsmith, Sheffield Steel Corporation

**BUSINESS MEETING—ELECTION OF ADMINISTRATIVE COMMITTEE MEMBERS**

**10:00 a.m. Jade Room**

**BASIC CONCEPTS AND APPLICATION OF QUALITY CONTROL—WHAT IT MEANS TO INDUSTRY AND MANAGEMENT**

### TUESDAY, OCTOBER 20 *(Continued)*

Quality Control Sessions sponsored by the Metropolitan Chapter, American Society for Quality Control — **10:00 a.m. Jade Room**

**COMPANY MEMBER CONFERENCE ADMINISTRATIVE COMMITTEE LUNCHEON—ELECTION OF CHAIRMAN AND VICE-CHAIRMAN** — **12:30 p.m. Astor Gallery**

**COMPANY MEMBER CONFERENCE** *(Continued)* — **2:00 p.m. Astor Gallery**

*Report on a Company Numbering System*
P. J. Callan, Eastman Kodak Company

*Drawings and Drafting Room Practice* — Comments on recent activities of ASA Sectional Committee on Standards for Drawings and Drafting Practice, Y14

Professor R. P. Hoelsher, Head of General Engineering, Drawing Department, University of Illinois; Chairman of Y14 Sectional Committee

*How to Profit from Membership in the Company Member Conference*

A. W. Meyer, Brown and Sharpe Company

**QUALITY CONTROL** *(Continued)* — **2:00 p.m. Jade Room**

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### WEDNESDAY, OCTOBER 21

**CONFERENCE ON PALLETS—A discussion of the need for national standards and the question of American participation in the national program of work of the International Organization for Standardization** — **10:00 a.m. Basildon Suite**

Conference leader (tentative) National Security Industrial Association

**INDUSTRIAL NOISE SEMINAR** — **10:00 a.m. Jade Room**

*The Relations of Hearing Loss to Noise Exposure*

**CATALOG CONFERENCE** — **10:00 a.m. Astor Gallery**

**A general conference to determine scope, sponsorship, and future plans for project on standardization of catalogs authorized by Standards Council**

**ANNUAL AWARD LUNCHEON** — **12:30 p.m. Starlight Roof**

Award of the Howard Coonley Medal and Standards Medal (Recipients to be announced)

**Registration** — $15.00 for all sessions including luncheon and published Proceedings. $10.00 for all sessions including published Proceedings but excluding Award Luncheon. $6.00 Luncheon only. $2.00 per session.

**Complete program and registration forms** will be mailed the latter part of September.

**Press Room and headquarters office** for the Conference will be in the Regency Suite. Open 8:30 to 5:30.